

JPRS 74903

10 January 1980

USSR Report

ECONOMIC AFFAIRS

No. 906

FBIS

FOREIGN BROADCAST INFORMATION SERVICE

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REPORT DOCUMENTATION PAGE		1. REPORT NO. JPRS 74903	2.	3. Recipient's Accession No.
4. Title and Subtitle USSR REPORT: ECONOMIC AFFAIRS, No. 906			5. Report Date 10 January 1980	
7. Author(s)			6.	
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			8. Performing Organization Rept. No.	
12. Sponsoring Organization Name and Address As above			10. Project/Task/Work Unit No.	
			11. Contract(C) or Grant(G) No. (C) (G)	
13. Type of Report & Period Covered			14.	
15. Supplementary Notes				
16. Abstract (Limit: 200 words) This serial report contains information on recent administrative plans, changes, and policy trends, items on the state of the national economy, significant and representative comments and statistics on principal industrial sectors.				
17. Document Analysis a. Descriptors USSR Economics				
b. Identifiers/Open-Ended Terms				
c. COSATI Field/Group 5C				
18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22161		19. Security Class (This Report) UNCLASSIFIED		21. No. of Pages 75
		20. Security Class (This Page) UNCLASSIFIED		22. Price

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SOVIET ECONOMIC POLICY: REFORM MEASURES BUT NO REFORM

Stuttgart OSTEUROPA in German No 11, 1979 pp 936-942

[Article by Hans-Hermann Hoehmann, Gertraud Seidenstecher: "Soviet Economic Policy: Reform Measures, But No Reform"]

[Text] No New Concept

Leading Soviet political figures have repeatedly expressed their dissatisfaction with the inadequate performance of the present planning system at party congresses and plenary sessions of the CPSU Central Committee, before the Supreme Soviet and in the Soviet daily and technical press. Not the least of these expressions was the repeated criticism of the planning situation and calls for substantial improvements by the head of the party himself. Despite this, reform measures of major proportions were long in coming. A contributing factor here may have been that the unstable economic situation and the unbalanced structure of the Soviet economy made it extremely difficult to develop a uniform reform concept that would profoundly change the present system of planning without subjecting the economy to conversion risks that were too great. Moreover, there has been no influential group among the Soviet leaders that might have been able to successfully propound and push through a more far-reaching reform concept in the face of opposition from conservative forces in the party and society. Nevertheless, following the considerable decline in economic growth in the first half of 1979, the need for new measures designed to improve the planning system had apparently become urgent.

The measures for reorganizing the Soviet planning system, approved by the CPSU Central Committee and the USSR Council of Ministers at the end of July 1979, do not signify any basic reorientation of Soviet economic policy. They are not directed toward a new, continuing reform concept -- that of a socialist market economy, for instance. Rather, they are one of a continuing series of efforts by the Soviet government -- observed since the mid-1960's -- to loosen up the existing traditional system of administrative planning and make it more efficient.

The announced measures once again underscore the effort by the Soviet leadership to restore through improvements in the economic policy machinery the ability to control the economic process that was lost as a result of the increasing complexity of the economy, to supplement the traditional verticality of planning by expanding horizontal coordination mechanisms, to increase economic efficiency and to improve product quality.

The text of the party and government resolution was published at the beginning of August in the *EKONOMICHESKAYA GAZETA* (No 32, 1979). The Soviet daily press had previously already printed extensive summaries. These accounts disclosed the key points of the resolution and at the same time showed that this was again essentially a catalog of demands, the realization of which is by no means assured.

Planning is once again being called upon to put aside all its former bad habits and become an economic policy instrument suited to all purposes. Left open, for the most part, is the question of which institutions and methods are to be used to bridge the contradictions between different, not easily reconcilable principles. Thus, the call is for both consolidating central planning as well as strengthening initiative from the lower echelons. The authorities are being instructed to assure greater stability of the plans, but at the same time they are being asked to be flexible in adjusting to altered conditions. Annual planning, five-year planning and ten-year planning are to continue to be linked with one another. Furthermore, a better connection between branch and regional planning is again being sought. All this is to be achieved by raising the scientific level of planning. Moreover, social policy measures designed to improve working, educational and living conditions are scheduled to be more firmly rooted in the plans of the production associations (enterprises).

Many of the individual elements of the new measures have already been tested for lengthy periods in some sectors of industry and construction. Some of the measures will not take effect until a few years hence, after the necessary conditions have been established. This open-endedness in terms of time and concept leaves room for necessary adjustment processes on the one hand, thus allowing a more flexible reform policy; on the other, however, it also opens the door to attenuation and dilution. We must thus wait and see whether the new approach will effect real changes or be absorbed by the everyday administrative routine.

The resolution announces changes for three sectors. In the first place, measures are scheduled in the area of supraenterprise and enterprise planning; secondly, measures are planned in the investment sector. And finally, the bonus system and the use of the so-called economic lever are to be developed further.

Changes in the Planning System

In the area of planning, stability and continuity are to be increased. Once again, the five-year plan is being declared the main form of planning. It will be the task of the annual plans to define the five-year plan in precise terms. The principle of planning "from below" is to be applied here: Taking the provisions of the five-year plan as a basis, the production associations (enterprises) will draft their own counterplans which are to be incorporated into annual planning. This is supposed to mobilize the capacity of the enterprise collective, while simultaneously channeling it in terms of economic planning.

Five-year planning was supposed to have been made the principal form of planning for the enterprises once before, but with little success. So by reason of experience to date, there has to be doubt about the success of making the 11th Five-Year Plan (1981-1985), which is presently being prepared, an effective instrument of regulation over the long term. The Soviet economy's own dynamics, the repeated recurrence in some sectors of disruptions that affect the entire planning structure and changing ideas as to goals among the leadership should necessitate repeated annual adjustments in the future as well, thus nullifying five-year plan targets. One reason why disruptions in parts of the economy have frequently carried over to the economy as a whole, thus jeopardizing the stability of the plans, is that the supraenterprise sector has had no available reserves with which to ward off such disruptions. Although the custom of stringent plans led the enterprises to hoard all manner of means of production, these resources nevertheless could usually not be reincorporated into the economic cycle. Now a new attempt is to be made to expand the economy's room to maneuver by forming reserves available to the supraenterprise sector, thus improving its ability to deal with short-term disruptions.

It is to be attempted in various ways to make the economy more dynamic and more receptive to new impulses. In the first place, management and planning organs are to make their decisions on the basis of economic and technical calculations and not -- as has most often been the case -- base them on a simple continuation of that which was done before, for this practice has failed to bring about necessary structural changes. The short time spans involved in planning at all levels have had a similar effect. The profit/loss assessment, which in each case was concentrated on individual plan years, had the effect of discouraging innovation and preserving the existing structure. In contrast, the new approach will be that fulfillment of the five-year plan at all levels of economic administration is no longer to be assessed separately for each year, but "continuously and cumulatively" by adding in the respective annual results from the beginning of the plan period. Such a cumulative estimation of five-year plan results is supposed to help expand the horizon of disposition and profit-and-loss, thereby making the economy more dynamic and more willing to take risks.

To be sure, two reservations must be noted. First of all, the cumulative estimation of results makes sense only so long as the stability of the five-year plan is assured. Secondly, it cannot be ruled out that the enterprises will continue to be cautious in their proffered performances, for performances that are too good --especially in the closing phase of a five-year plan -- might cause the planning authorities to set plan quotas for the succeeding five-year plan that are higher or even too high. Greater emphasis than before is to be placed on "participation by the workers' collectives" in the effort to mobilize the impulse to achieve. It appears in many instances that the question of which forms this is to take is still open. So far, specific arrangements seem to have been made only at the brigade level (see below).

New Plan Index Figures

Once again a change is scheduled for the system of enterprise plan and profit/loss index figures, with the number of plan index figures being increased. Of special significance here is the introduction of an upper limit for employment figures. An upper limit of this kind had not been stipulated since the reform of 1965; rather, the labor force of the enterprises was initially supposed to be regulated solely by way of wage-fund and labor-productivity planning. The intensive effort by Soviet enterprises to employ as many workers as possible for a number of reasons (to obtain as much bonus money as possible and as a cushion against plan increases) has now caused the Soviet leadership to reinstate a compulsory ceiling on enterprise employment.

Decisive importance will be accorded in the future in the Soviet industrial sector to the "normative net production" index figure, which has already been tried on an experimental basis. The traditional "gross production" index figure, which although it was supposed to have been phased out in the 1965 reform has survived in many forms, and the related "marketed production" index figure introduced in 1965 made it profitable for the enterprises to use costly (or heavy) preliminary products in the interest of fulfilling the plan more easily, a situation that led to distortions in product assortment as well as excessively costly (or heavy) production. Planning of the scope of production according to normative net production is supposed to take greater account of the enterprise's own output, for net production does not include supplier services from other enterprises. Normative means that planning and the profit/loss evaluation are not based on the actual net production of an enterprise but on a norm. Indeed, a performance evaluation based on actual net production could again lead to a situation wherein the enterprises would go through unnecessary processing steps in order to achieve high net production and thus a high level of plan fulfillment, even though the products obtained were of neither the quality nor variety desired by the consumer. In the planning of normative net production, the enterprises are given guidelines for individual types of products; using these guidelines, they must allow for the production

of the appropriate products within the framework of their profit/loss account. This method of planning is intended to interest the enterprises in intensifying production processes -- economizing in the use of material and manpower -- because in contrast to former planning practices it will have a positive effect on their profit/loss index figures.

The economic logic of the "normative net production" index figure cannot be disputed. As experiments show, it can be applied successfully in many industrial branches, especially in the case of homogeneous production for which it is also relatively easy to establish norms. In cases involving the production of varied assortments, however, its application presupposes the calculation of a number of different norms that must in addition take into account the varied production conditions in individual enterprises. Consequently, substantial administrative outlays will accompany the introduction of the norm-based net production index figure. They will presumably have to resort to lump-sum outlays, but this would again create "profitable" and "unprofitable" products, a situation which would probably lead in the future as well to the distortions in product assortment that are familiar under present practices. Moreover, it is difficult to adjust norms quickly enough to changes in production conditions. If, however, they were to be kept stable for too long a time, their influence on the retention of traditional production structures would be conservative and would discourage innovation. Furthermore, it can be assumed that the enterprises will use the dependence by the authorities on information from the lower echelons to obtain profitable net production norms by practicing a corresponding information policy. This also leads to disadvantages for the economy.

The danger of renewed distortions is to be countered in two ways. The first is by strengthening natural economic elements in planning. The state norms (technical parameters) given for the production of individual goods in addition to "production of the principal types of products expressed in kind" are to be improved and refined. Secondly, the interenterprise contracts are to be used to a greater extent for better coordination of product assortment between production and purchaser enterprises. The so-called stable direct relations that have been tried out for a lengthy period in a number of industrial branches are to regulate economic ties in the interenterprise sector within the realm of planning and will also play an important role in the bonus system. The contractual relations negotiated by the economic organs, which do not allow a change of contract partners, can certainly help improve processes of coordination between production and purchaser enterprises. However, Soviet purchaser enterprises cannot avail themselves of the opportunity for contract cancellation, an element of sanction that is crucial to the disciplining effect of contractual ties in market economy systems. Although it is now planned that contract violations will in any event bring financial sanctions, it can still be expected that such sanctions will be largely ineffective in view of the still comparatively little weight that they carry and the frequently existing excess liquidity of the enterprises.

Innovations in the Investment Sector

The second part of the decree provides for a number of measures designed to improve efficiency in the investment sector, particularly as regards accelerating the opening of production capacities. A renewed attempt is to be made to counteract the diffusion of investment funds, shorten construction periods and reduce the volume of unfinished projects to the volume prescribed by the norm.

The arrangements made for this conform in principle to those planned for industry. For instance, the stability of plan quotas must be increased for the investment sector. The most important form of planning is to be the five-year plan with a breakdown of plan goals by individual years. The plans are to be better balanced. In other words, they are to be co-ordinated with material and manpower resources, construction capacities, capital goods production and financial capital. Investment funds are to be concentrated to a greater degree on the modernization of existing enterprises; enterprise expansions and new construction are to be authorized only if the need for specific products cannot be met by existing enterprises (after they have been modernized!).

The index figure system is also to be reorganized for the construction industry. Within five-year and annual planning, the following index figures are scheduled to play a substantial role for construction ministries and organizations in the future: opening of production capacities; scope of construction production (according to the volume of goods production), subdivided according to clients; growth of labor productivity; profit. For individual construction organizations the reduction of prime costs for construction and assembly work can also be indicated in advance.

Of particular additional significance is the fact that in the future the ceiling on the labor force is to be prescribed for the construction ministries and organizations in accordance with the arrangements planned for industry. Planning and performance evaluation in industry and also the construction industry are ultimately to be done to a greater degree on the basis of index figures that express the enterprise's own performance in terms of production efficiency and quality as well as of conformity with the wishes of the client. In addition, beginning in 1981 construction production (goods production) is to be balanced on the basis of estimated value according to completed, fully operational projects. Furthermore, measures are to be implemented for the years 1979/1980 that will permit a calculation of labor productivity and the planning of the wage fund on the basis of normative net production. And finally, bonuses are to be increased for readying buildings for occupancy within the specified period.

Institutional details and those pertaining to method have of course not yet been prescribed in many instances. The nature of the resolution as a catalog of demands is also emphasized for the construction industry.

Further Development of the Bonus System

The third part of the decree is mainly devoted to further development of the bonus system. Soviet industry's incentive system is to give greater support to the sought-after goals of increased efficiency, improved quality and a better coordination of production and demand structures. The principal factors determining the amount of bonus funds in the industrial sector are listed as the fulfillment of delivery plans with adherence to delivery schedules and the stipulated product assortment, increased labor productivity, improved product quality and increased profits. Depending on the peculiarities of individual branches, the awarding of bonuses can also be based on other quality index figures (economical use of materials, increased capital productivity, higher shift coefficients, higher level of profitability, reduced prime costs). The payment of bonuses in extractive industries is to conform to the growth of production in natural dimensions. The norms on which the payment of bonuses is based are to be determined for the individual years prior to the start of the five-year plan. This is to enable the production associations (enterprises) to gain an overview for a lengthy period of the correlation between performance and bonuses so that they may manage their affairs on a longer-term basis. Bonuses for members of research and development organizations are to be awarded in accordance with the economic benefit to be gained from the application of new technology.

Of further significance is the fact that the brigade is to become the principal form for labor organization as well as for remuneration and the payment of bonuses during the 11th Five-Year Plan (1981-1985). On the basis of predetermined norms and within the scope of funds allocated, the production brigade councils themselves will largely determine how the performance of a brigade member affects his wage and bonus payments.

Summary Assessment

The measures announced for industry and construction are based on a common trend. A reorganization within the planning and bonus system is designed to promote the intensive factors in economic growth, particularly increases in productivity, and an expansion of contractual relations is simultaneously supposed to improve horizontal coordination within the economic process. However, no decisive correction is to be undertaken as regards the principle of the subordination of production associations (enterprises) to higher-level planning and administrative authorities. On the contrary, the influence of senior planning officials has been increased in many sectors. Thus, the calculation of a large number of net production norms or the selection and refinement of natural plan index figures and/or product or production norms is more likely to increase the scope of administrative interference in the enterprise economic process. To that extent the trend toward strengthening the market-oriented, and at the same time efficiency-oriented, regulation of the Soviet economy will be kept within narrow confines.

In general there must consequently be doubt about the effectiveness of the new measures. Better coordination between the individual parts of the economy and a steady rise in efficiency could probably be achieved only if the Soviet leadership could permit a greater measure of market-oriented regulation and sanctions imposed by the market, and if functioning mechanisms for this were to be established. This would be possible only within the framework of a continuing, more decisive reform concept. The compromising and fundamentally conservative course of Soviet economic policy may well be determined just as much by the USSR's difficult economic situation and the development tasks yet to be accomplished as by the sovereign interests of the party and the obscure personnel situation at the close of the Brezhnev era.

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CSO: 8120/0423

HEAD OF GOSBANK'S KAZAKH OFFICE DISCUSSES ECONOMIC DEVELOPMENT

Moscow DEN'GI I KREDIT in Russian No 10, Oct 79 pp 14-24

[Article by V. A. Bondarenko, head of the Kazakh republic office of Gosbank: "Actively Promoting Economic Development"]

[Text] The workers of Kazakhstan, implementing the historic decisions of the 25th CPSU Congress, subsequent plenums of the CPSU Central Committee, and the instructions of Comrade L. I. Brezhnev, general secretary of our party's central committee and chairman of the Presidium of the USSR Supreme Soviet, have achieved further success in economic development and in carrying out the socioeconomic program outlined for the 10th Five-Year Plan.

About 22 billion rubles were invested in the republic's development between 1976 and 1978. The gross social product was 14.3 percent higher in 1978 than in 1975, and the volume of industrial production increased 11.7 percent. Production capacities were put into operation at the Novyy Dzhambul Phosphorus Plant, the Pavlodar Petroleum Refinery and a number of other enterprises. The output of cast iron and steel have increased, more electric power has been generated, and there has been an increase in the production of rolled products of ferrous metals, machines and equipment. The output of consumer goods has increased, their assortment has widened, and quality has improved.

In 1978 the gross output of agriculture was 33 percent higher than in 1975. In 3 years 2.7 billion poods of grain were sold to the state. The plan for the 3-year period was overfulfilled concerning the sales of milk, wool, eggs and many other farm products. An extensive program was carried out in the construction of production projects, housing and utilities and social welfare and cultural facilities.

Achievements in the development of material production have made it possible to accomplish stable growth of the national income, which has increased 12.4 percent over 1975 and amounts to 17.5 billion rubles. Real per capita income increased more than 10 percent over 1975. Plans were fulfilled for retail sales and paid services to the public, and other measures are being carried out to raise the standard of living.

In the current 5-year period, as in previous years, the important achievements in the republic's economic development became possible thanks to the development of virgin and long-fallow land, the 25th anniversary of the beginning of this effort being celebrated this year. "Virgin land has given a powerful thrust to development of Kazakhstan's productive forces, to the growth of its economy, science and culture ... a tremendous agroindustrial complex has taken shape in this region, and its influence has been powerfully felt in the development of our country's entire economy," L. I. Brezhnev said in his book "Tselina" [Virgin Land].*

In carrying out the socioeconomic program for this republic advanced by the 25th CPSU Congress an important role is to be played by Gosbank institutions, which vigorously promote its successful fulfillment with money and credit, various forms of economic pressure and supervision, and all their other functions.

Gosbank institutions in the republic, which attribute extremely great importance to a further rise in the standard of living and to the need for strengthening the circulation of money, are paying paramount attention to the questions of fuller satisfaction of the ever growing size of the population's effective demand, maximum absorption of all its cash income, and achievement thereby of fulfillment of assignments for the circulation of money and for raising the buying power of the Soviet ruble.

We are taking an active part in compiling plans for economic and social development, and as they take shape we submit proposals to policy-making and planning agencies and to the Gosbank Board concerning creation of the necessary prerequisites for a better balance between personal income and expenditures. Proposals to increase the plan for retail sales, taking into account the volume of the public's purchasing funds and the potential that exists for increasing them, are regularly submitted to the Kazakh Council of Ministers. A supplemental assignment for retail sales amounting to 415 million rubles established for the 1976-1979 period when plans for economic and social development were approved. When the plan for 1980 was taking shape, we also submitted a proposal for an additional increase of 169 million rubles.

When the plan for economic and social development is taking shape and as it is carried out, an ongoing study is made of the completeness of the load on production capacities, the existence of unused potential in terms of raw materials, and possibilities for increasing the output of consumer goods--not only in industry where their principal production is concentrated, but also in other industries, including heavy industry; on the basis of results proposals are submitted to the appropriate authorities concerning augmented production of these goods as well as expansion of all paid services rendered to the public.

* Brezhnev, L. I., "Tselina," Moscow, Politizdat, 1978, p 79.

An annual study is made of the promptness with which retail sales plans are broken down to the local level and of the correctness of their allocation among trade systems, oblasts, rayons, cities and quarters. On the basis of that study proposals are submitted for adjustment and reallocation of the amount and for correction of inconsistencies discovered. At the same time regular supervision is exercised over the state of trade and the performance of enterprises in the service sphere, over fulfillment of their assignments for the volume of sales and services, over the production of consumer goods and their delivery to trade, over the supply of commodities and over the location of goods. Economic pressures are exerted on enterprises and organizations which are not fulfilling these assignments.

Much attention is paid to comprehensive rayon and oblast surveys of the circulation of money, development of the volume of sales and paid services, and also other matters related to satisfying the public's effective demand. These are conducted by Gosbank offices jointly with people's control committees, planning and financial agencies, and the appropriate economic entities. Checks of this kind have been conducted on the bank's initiative in Severo-Kazakhstanskaya, Taldy-Kurganskaya and Kokchetavskaya oblasts and in 70 of the republic's rayons. The results of the checks are taken under consideration in the leading organizations of rayons and oblasts and in the republic's council of ministers, which has great importance concerning further strengthening of the circulation of money.

Broad practical assistance is extended to Gosbank offices and departments in the proper organization of their work in the field of the circulation of money, in improving the quality of planning that circulation, and in intensifying bank supervision and pressure toward fulfillment of plan assignments by all enterprises and organizations. Last year alone the republic office and oblast offices of Gosbank extended practical assistance to 200 institutions in the proper organization of this work. Reports of directors of 88 institutions have been heard on the results of the checks, and on the basis of those reports measures were taken to improve work in this exceedingly important area of bank activity.

Measures taken by party, Soviet and economic entities and also by Gosbank institutions have in the 3 years of the 5-year period made it possible to achieve fulfillment of the retail sales plan at a level of 100.5 percent and to sell 165 million rubles of commodities over and above the basic plan.

The performance of enterprises rendering consumer services has improved noticeably; every year they are fulfilling plans for the volume of services rendered to the public. Last year the volume of retail sales was 14 percent over 1975, and the volume of consumer services was up 16.4 percent. These assignments are also being fulfilled successfully this year.

Substantial improvement of indicators related to the circulation of money has been achieved in the republic: in the 3 years of the 5-year period the cash plan was overfulfilled on the income side. Successful fulfillment of

the cash plan made possible the timely satisfaction of the needs of the economy for cash to pay wages, to purchase agricultural raw materials and farm products, and to meet other needs, which ultimately had a beneficial effect on general progress in fulfilling the plan for economic and social development.

Development of the savings field has great importance to further strengthening of the circulation of money. The republic office of Gosbank, jointly with the republic's main administration of state worker savings banks, has been making an effort to organize the payment of wages to workers and employees and earnings to kolkhoz members through savings banks and also to expand noncash settlement with individuals for agricultural products and livestock. Last year the volume of personal income transferred to accounts in savings banks increased 56 percent over 1975.

Much attention is being paid to organizing supervision over expenditure of wage funds, to the growth of labor productivity and to ensuring economical expenditure of funds to pay wages and bonuses. In associations, enterprises and organizations, ministries and departments regular checks are made on the correctness of distribution of the annual wage fund by quarters in accordance with the planned volume of production.

In cases when necessary sanctions are applied in the form of reduction of the proportion of funds released for wages, or enterprises are monitored on a monthly rather than a quarterly basis. Thanks to the performance of these and other measures the level of overexpenditures relative to the total wage fund in the industrial sector dropped from 1 to 0.9 percent between 1975 and 1978, while the drop in the construction industry was from 3.1 to 2.8 percent.

While we take note of the improvement in the state of the circulation of money in the republic, we are aware that there are also unsolved problems in this important area. A persistent effort is not being made in all rayons toward fuller satisfaction of the public's effective demand, and consequently the relationship between cash income and expenditures has not been achieved everywhere. In Kzyl-Ordinskaya, Mangyshlanskaya and Gur'yevskaya oblasts and certain other regions a considerable number of trade, consumer-service, municipal-service, transportation and other enterprises and organizations are not fulfilling plans with respect to the principal indicators, and there are shortcomings in their work related to satisfying the public's material and cultural needs. Gosbank institutions in Kazakhstan have accordingly had to analyze still more thoroughly the actual personal income and expenditures by oblasts, cities, rayons and trade systems, progress in development of the volume of sales and paid services, possibilities for increasing the production of consumer goods by virtue of fuller utilization of the resources of raw materials and production capacities not only at existing enterprises, but also at new ones being put into service, and they have been submitting recommendations to policy-making organizations at fuller absorption of income and improvement of the indicator of note issue. Particular attention should be paid to creating the conditions necessary to fuller

absorption of the cash income of the rural public and to maximum satisfaction of its material and cultural needs, since the development of the volume of sales and paid services is lagging behind in the republic's rural localities.

At the same time the problem of more complete balance between personal money income and expenditures, of proper determination of the public's purchasing power, and of improvement on that basis of the planning of production, sales, services and finally, the circulation of money, requires in our opinion that a number of important questions that have an essential bearing on solving these problems be taken up.

It is well known that correct determination of the planned wage fund is very important to fuller determination of personal income and high-quality compilation of plans for the circulation of money in the republic, oblast or rayon. Solving the problem of planning the wage fund in a regional breakdown by republics, oblasts and rayons would greatly further this end.

The question of improving the procedure for planning retail sales is equally important. The present practice of distributing this volume by oblasts and rayons and by trade systems on the basis of the plan approved by the superior agency does not give the requisite consideration to the volumes of personal money income, and this has the result that the plans turn out to be too low in some rayons, trade systems and organizations, while in others, on the other hand, they are too high, as confirmed by numerous cases.

A good purpose would be served by taking up the question of compiling balances of personal income and expenditures in oblast centers in a breakdown by rayons, which would then be used as the basis for setting up the planning of retail sales. There is at the same time a need to develop appropriate instructions as to the method of compiling such balances.

The bank's relations with the republic's economy are based on a greater role for the finance-and-credit system in invigorating the development of production, in improving the performance indicators of production, in reducing unproductive expenditures and losses, and in raising the efficiency of social production. Investments financed with short-term credit has increased by one-third since the beginning of the current 5-year period and as of 1 January 1979 had reached 12.9 billion rubles; at the same time a proper relationship is maintained between the growth rates of credit and the volumes of industrial production and trade turnover. In agriculture the growth rates of credit-financed investments are higher than the rates of growth of gross output, the reason being the shortfall of production in dry years.

While the total growth of credit-financed investments in industries was 12.9 percent during the first 3 years of the 5-year period, they increased in heavy industry by 32 percent. Credit has begun to be used to a greater extent for preparation of new production operations, for performance of startup and adjustment work and for bringing newly opened enterprises, shops

and processing units up to rated capacity, and to organize the manufacture of new products and application of new manufacturing processes.

The average amount of credit to finance startup and adjustment work and expenditures to bring newly opened enterprises, production operations, shops and processing units up to rated capacity exceeded 14 million rubles in those years. Credits to cover goods whose inventories are intended for putting new types of products into production and for increasing the quality of products have increased 2.5-fold since the beginning of the 5-year period. Under the conditions of Kazakhstan, where the extractive industry has experienced particularly extensive development, an important role has begun to be played by credits to finance the work of mining preparation and stripping operations in nonferrous and ferrous metallurgy, the coal industry and the chemical industry, as well as in certain other extractive industries. As of 1 January 1979 more than 10 percent of all credits to finance heavy industry went for loans to cover outlays for mining preparation and stripping and also for expenditures against future periods.

Gosbank institutions of Kazakhstan are maintaining uninterrupted credit financing of kolkhozes, sovkhoses and other agricultural enterprises to cover production costs and to build up seasonal inventories of products and materials. The policy of using credit to stimulate the growth of agricultural production is being pursued unstintingly. In the periods of spring planting and harvesting work preferential credit financing of sovkhoses and kolkhozes is being introduced; credit is being supplied to cover their entire planned seasonal gap in production costs.

Credit relations with agriculture are studied on a regular basis, and steps are being taken to further improvement of the practice of credit financing of kolkhozes, sovkhoses and other enterprises. Particular attention is being paid here to check to see that the production and financial plans compiled by kolkhozes are sound, to see that expenditures are not planned in excess of income, and to see that the amount of credit to be extended and dates for its repayment are determined correctly.

If sovkhoses have large superfluous above-plan remainders of products and materials, extension of credit to pay for purchased production stocks is limited to a 3-month inventory, and in a number of cases they are refused credit altogether. Pressures of this kind were applied against 101 sovkhoses in 1976, 177 in 1977 and 276 in 1978; this inhibits economically unsound growth of inventories of purchased goods.

In connection with the credit financing of trade organizations the monitoring of Gosbank institutions is mainly concerned with stimulating the growth of sales, normalizing commodity inventories, improvement of inventory structure and location, and also the search for additional commodity resources. Pressures have begun to be applied more vigorously to keep out of the trade system shoddy goods which the public does not want and also to promote the sale of stale goods which have not been in great demand. These and other measures have helped to make credit more effective in the trade sector.

We attribute great importance to performance of measures to carry out the requirements of Gosbank Order No 138 dated 15 September 1977, which had to do with strictness in extension of credit and elimination of unsound extension of credit to enterprises and organizations to cover financial shortfalls occurring because of poor operation.

Much attention is being paid to development of credits covered by credit agreements with enterprises and organizations reflecting their commitments to take steps to reduce inventories of products and materials and to build back their "own" working capital that has been expended. Examinations of economic entities which have received credits to cover above-plan inventories of products and materials on the terms envisaged in credit agreements have shown that such practice enhances the oversight which enterprises and organizations and also Gosbank institutions exercise over the movement of inventories covered by credit and has an essential impact toward their reduction. Moreover, quite good results are being achieved above all in associations and enterprises where the financial service and economic statistics have been properly organized, where serious study is paid to the reason for formation of above-plan inventories and where steps are taken to mobilize material resources. Another motive for this is the responsibility of economic entities to discharge obligations to the bank envisaged in credit agreements.

At the same time we should note that assignments for putting above-allowance inventories of products and materials to use and for speeding up the turnover of working capital are being performed unsatisfactorily by many enterprises in the republic. It seems to us that to a certain extent this situation has to do with serious shortcomings in mobilization of material resources on the part of economic entities, especially Kazakh SSR Gossnab.

As for furnishing the economy credit to cover settlement, the status of "own" working capital of enterprises and associations, its preservation and its use for the intended purpose are constantly monitored, which is helping to reduce the number of economic entities which have a shortage of "own" working capital.

Credits for temporary replenishment of the shortage of own working capital has undergone further development; outstanding credit for this purpose has increased 40 percent in the republic. But the practice of extending loans for measures aimed at replenishment of own working capital which has been spent has shown that they are not being repaid altogether from additional profit.

In many cases enterprises which have spent their own working capital evade the drafting of organizational and technical measures aimed at obtaining additional profit or credit on the terms envisaged in credit agreements, since they assume that their working capital will be replenished from the budget or on the basis of redistribution, or that they will appeal on the basis of the strenuousness of the plans assigned.

We accordingly believe it possible to expand the practice of issuing loans for temporary replenishment of a shortage of own working capital to associations and enterprises on the terms envisaged in credit agreements, but credits issued for this purpose should be covered by a guarantee of the relevant ministries and departments, which should enhance their responsibility for the consideration and actual performance of the necessary steps aimed at replenishing the funds which have been spent.

On the basis of the tasks arising out of plans for economic and social development in the 1976-1978 period, Gosbank institutions in Kazakhstan have continued the work of funding capital investment projects and furnishing long-term credit for them. In these years the volume of capital investments actually funded and credit financed by Gosbank institutions was 7,867 million rubles, including 7,273 million rubles in agriculture and water management construction, which is 49 percent more than in the 1971-1973 period. Gosbank institutions are orienting their work primarily toward maximum concentration of physical, labor and financial resources at the most important construction sites and projects, at reduction of unfinished construction and at fulfillment of assignments for activation of production capacities.

An analysis of plans of capital investments and of the composition of unfinished construction in the 1976-1979 period carried out at the insistence of Gosbank showed that many new construction starts were left out of draft plans, and the funds made available were committed to completion of projects near completion or carried over, which made it possible to increase the planned activation of fixed capital by 133 million rubles. In kolkhozes and interfarm organizations Gosbank recommendations led to the omission of 655 new construction starts, representing an annual volume of work amounting to 37 million rubles, from the draft plan for capital construction in those years. In 1979 268 projects with an estimated cost of 31 million rubles were not accepted for financing on 85 kolkhozes.

Engineering and technical personnel are paying particular attention to monitoring the correctness of project plans and estimates and clients' payment for work done on construction and capital repair and for startup expenses. In order to supervise more closely progress of construction of large livestock-raising complexes, industrial-type poultry farms and water management projects, the most important of them, as well as all kolkhoz construction projects with an estimated cost of more than 1 million rubles, have been taken under the direct supervision of the republic office of Gosbank. Last year progress of construction on such projects was studied, and a report on the shortcomings discovered was submitted to the Kazakh CP Central Committee and the Kazakh SSR Council of Ministers.

In accordance with the Main Lines of Economic Development in the 10th Five-Year Plan, our attention in organizing settlement has been concentrated on seeing that the process of a product sale is completed by virtue of more punctual payment for products and materials, for jobs done and services rendered, on seeing that payments are made into the budget on schedule, and on monitoring observance of contract discipline more closely.

With respect to settlements, our institutions are constantly seeking ways of improving them and speeding them up. In the case of settlements of purchases of petroleum products with organizations of Glavneftesbyt [Main Administration for Petroleum Sales] about 85 percent takes the form of these payment authorizations.

As a result of joint work of Gosbank institutions and ministries of the republic's food industry and meat and dairy industry, the relative share of settlements taking the form of planned payments was 60 percent of payments traffic for enterprises of the bread-baking industry and 56 percent for the dairy industry, and the share of settlements based on clearing was 36 percent for the brewing industry and 23 percent for the dairy industry. The use of economically expedient forms of settlement has made it possible to considerably reduce accounts receivable and accounts payable in these industries.

In highway transportation more than 10,000 customers, or 76 percent of the total number, have been put on summary billing [(?) raschety svodnymi trebovaniyami]. Thanks to the introduction of summary billing accounts receivable for services actually rendered dropped 3.7 percent, and accounts payable decreased 7.6 percent, while volume indicators showed a growth of 11 percent. In order to reduce the volume of outstanding credit and to prevent the occurrence of unbilled deliveries, 92 percent of economic entities extended credit to cover billing documents en route were put on a 2-day period for issuance of documents for deposit following shipment of the product or rendering of services.

The number of on-the-spot checks run on settlements, on reasons for buildup of accounts receivable and outstanding credit, correlation between bills and shipment, the soundness of refusals to accept demands for payment, and other matters, increased 68.5 percent between 1977 and 1978. There was an increase in the number of economic pressures exerted for violation of settlement and contract discipline, and the number of economic entities doubled in which individuals were deprived of bonuses for having submitted bills which did not correspond to shipments. The practice of converting suppliers to settlement after prior acceptance of demands for payment has been practiced more vigorously in cases when terms of delivery are regularly violated and when a large number of refusals of payment is received, and the same measure is applied to purchasers for increases in remainders of goods in shipment. All of this has helped to improve the composition of payments traffic and other indicators characterizing the condition of settlement. For the republic as a whole, while the volume of payments traffic at any one time increased 6.5 percent between 1977 and 1978, settlement of demands for payment after prior acceptance increased 8.4 percent, and clearing settlement increased 36.4 percent. There was an increase in the level of settlement taking the form of payment authorizations, planned payments and summary demands for payment and a decrease in settlement taking the form of letters of credit. Remainders of goods in shipment was reduced 2.4 percent between 1 October 1977 and the same date in 1978, and outstanding total accounts receivable also dropped 2.7 percent.

In 1978 the processing time of demands for payment was 0.7 day shorter than in the previous year, the number of faulty advices sent out in interbranch turnover decreased, and there was also a reduction in mistakes made in crediting and debiting accounts of economic entities.

These results were achieved to a considerable degree because of an examination of settlement made in the republic between 1 October 1977 and 1 October 1978 by joint decision of the Kazakh republic office of Gosbank and the Kazakh Republic Committee of the Trade Union of Personnel of State Institutions.

The collectives of the following were awarded honorary certificates and money prizes by the Kazakh republic office of USSR Gosbank and the Presidium of the Republic Committee of the Trade Union of Personnel of State Institutions on the basis of the results of the examination: the Pavlodarskaya, Dzhambul'skaya and Karagandinskaya oblast offices, city administrations of the Pavlodar, Tselinograd and Aktyubinsk offices; the following Gosbank departments: Kalininskiy and Leninskiy in Alma-Atinskaya Oblast, Sovetskiy and Zhelezodorozhnyy in Karagandinskaya Oblast, Zavodskiy and Industrial'nyy in Pavlodarskaya Oblast, Zyryanovsk in Vostochno-Kazakhstanskaya Oblast, and Zavodskiy and Yavlenskiy of the Severo-Kazakhstanskaya Oblast office of Gosbank.

At the same time, along with the good results in the organization of settlement, there were also shortcomings in the work of certain Gosbank offices and their subordinate institutions: reduction of accounts payable was not achieved, pressures were not sufficiently exerted against economic entities which had violated settlement discipline, and the effort toward fulfillment of contractual obligations by economic entities is still half-hearted.

Gosbank institutions are doing a lot of work with economic statistics in the process of organizing the circulation of money, credit financing, funding with appropriations and settlements in order to study the activity of the sectors of the economy, ministries and departments, oblast economic entities, associations, enterprises and economic organizations. Annual plans for study and analysis of the principal economic problems and the conduct of experiments were completely fulfilled and overfulfilled for the 1976-1978 period, and on the basis of their results recommendations were submitted for consideration to the Kazakh CP Central Committee, the republic government, oblast party organizations, and oblast Soviets of People's Deputies.

An important effort is being made toward fulfillment of the decisions of the July (1978) Plenum of the CPSU Central Committee. This effort is concentrated principally on performance of measures to further improve the economic system in agriculture and to strengthen the economics and finance of kolkhozes and sovkhozes.

Nevertheless, in discussing the state of the republic's economic development and the results of the impact of the finance-and-credit system toward increasing the efficiency of social production and the quality of performance,

In the years of the 5-year period 106 workers in the field have received higher education by correspondence and 405 have completed specialized secondary education. At the present time 432 are improving their business qualifications by correspondence in institutes and 423 are doing so in tekhnikums. In the republic as a whole 5,681 of the 9,264 people in the principal categories of bank personnel are specialists with higher and secondary education.

In the 1976-1978 period 960 people have taken training courses to improve their qualifications and to deepen their political and professional knowledge, and 3,318 have done so in economics schools and seminars.

Much attention is being paid to improvement of the qualifications of young specialists, who now number more than 800, including 104 people with higher education. The tutoring movement has become widespread in this connection. The number of tutors has increased to 1,202 during this 5-year period.

The office is systematically studying the qualitative composition of personnel included in the reserve pool and is working to upgrade it in the sense of higher political and business qualifications of personnel. As a result of the work that has been done since the beginning of the 5-year period more than 200 people have been promoted to more responsible work.

These and other steps to improve the style and methods of management and to improve personnel work have made it possible to reduce personnel turnover 28 percent as against 1975.

The work with personnel will continue and will be persistently improved in the light of the decree of the CPSU Central Committee entitled "On Further Improvement of Ideological and Political Education Work."

The decree entitled "On Improvement of Planning and Enhancement of the Impact of the Management Mechanism Toward Raising Production Efficiency and Improving the Quality of Performance," adopted recently by the CPSU Central Committee and USSR Council of Ministers, is an exceedingly important document which solves the problems that have arisen in management of the economy in a comprehensive way that takes into account the experience of the economic reform, and it will improve the economic system in our country.

Personnel of Gosbank institutions in Kazakhstan unanimously approved the measures outlined in that decree and aimed at faster economic development, raising the efficiency of social production, and ultimately a rise in the standard of living. They are fully resolved to apply every effort to vigorously promote the performance of those tasks which devolve upon Gosbank institutions from this most important decision of the party and government.

Practical implementation of the measures envisaged by the decree requires a tremendous amount of organizational and ideological-educational work on the part of party, Soviet and economic authorities, and it also places upon us,

we should note that in certain associations, enterprises and economic organizations fulfillment of planning targets for a number of indicators is not being achieved, losses and unproductive expenditures are being permitted, and the result is a loss or irrational use of working capital, especially in agriculture, and as a consequence punctual settlement is not being made, and delinquent indebtedness to suppliers and banks remains high.

In our view the present methods of bank pressure to improve the performance of lagging economic entities are already proving inadequate. Many credits are occurring in economic practice which are not covered by physical goods. We therefore feel that additional steps are needed to increase the responsibility of senior officials of ministries and departments and other levels of economic management as well as associations, enterprises and economic organizations themselves for enforcement of state discipline, for seeing that state plans are unconditionally fulfilled, and for preservation and proper use of working capital. The credit measures envisaged by the decree entitled "On Improvement of Planning and Enhancing the Impact of the Management Mechanism Toward Increasing Production Efficiency and the Quality of Performance" accordingly have extremely great importance. Their practical implementation will promote a further strengthening of the economy and financial condition of enterprises and organizations in all sectors as well as contract and payment discipline.

At the same time work with economic statistics in Gosbank institutions and their effect toward eliminating the present shortcomings in the performance of enterprises and organizations in various sectors are in need of further improvement. The transition to broad special-topic analysis of various aspects of the economic and financial activity of ministries and departments and other entities in management of the economy, as well as associations, enterprises and economic organizations, has not freed Gosbank institutions of the need for thorough analysis of the most important indicators of their performance as shown in annual and quarterly reports. It has only reduced somewhat the amount of correspondence which had begun to be conducted concerning results of the analysis of particular problems instead of the complete findings which were previously compiled. Incidentally, the compiling of complete findings is widely practiced even now.

A broad range of questions are covered by the plan of economic analyses and experiments compiled for the year for Gosbank as a whole. We and the oblast offices are compelled to add to it our own problems which are of interest to party and Soviet bodies and republic and oblast offices. As a result lower-level Gosbank institutions receive many assignments of all kinds which in practical terms are very difficult to perform at a level of high quality. It would therefore be wise to choose more carefully the group of bank institutions and the questions which they would be able to handle competently and punctually. We also feel that there has long been a need to set up a specialized scientific center (institute) in the Gosbank system which would concentrate its attention on studying the basic problems of the development of money and credit and would reduce somewhat the work done in this field in

Gosbank institutions; the main thing is to put the study of these matters on a truly scientific basis.

In our opinion we must find ways of active mechanization of the work of the credit staff, simplify the processing of credits thanks to machines (without detracting from supervision to enforce the basic principles of credit financing), and to relieve this staff of less important and secondary work.

We attribute great importance to work planning. Every year after plans for the economic and social development of the country and of Kazakhstan are approved, conferences and seminars are held in republic and oblast offices with managers of Gosbank institutions to examine the results of performance in the previous year and measures to perform the tasks confronting Gosbank in the coming year. The oblast offices and departments of Gosbank are extended practical assistance on a broad scale in proper organization of their work and in correcting the shortcomings which have been discovered. Responsible officials make visits to Gosbank institutions where the work has been well organized in order to study this experience both within the republic and also outside it. Advanced know-how is popularized in a series of regularly issued printed posters on the topic "Progressive Know-How." Attention is paid to improving scientific management. Commissions for production innovations are in operation in Gosbank offices and departments.

Particularly great importance is attributed to the time-tested method of achieving good performance indicators--the organization of socialist competition. Winners in the All-Union Socialist Competition during this 5-year period have included 13 out of the 19 oblast offices of Gosbank which participated in the competition. In 1978 the following collectives won prizes in two quarters: Gosbank departments in Leninsk, Kzyl-Ordinskaya Oblast, Merka and Georgiyevka in Dzhambul'skaya Oblast, and the Zavodskiy branch in the city of Pavlodar. In 1978 the Gosbank department in Yernak in Pavlodar'skaya Oblast has been a winner for two quarters.

The entire staff of many thousands of people in the Gosbank system in the republic are participating in socialist competition and in the movement for a communist attitude toward work. At the present time 3,328 workers have won the high title of "Shockworker of Communist Labor," many workers are competing for the titles "Best Economic Statistician," "Best Bookkeeper," "Best Teller," and so on. The title "Shockworker of the Ninth Five-Year Plan" has been awarded to 64 of our workers on the basis of the results of the competition, and 255 workers have been awarded the badge "Winner in Socialist Competition."

Now attention is constantly being centered on the selection, training and assignment of personnel, which is conducive to a further improvement in their composition with respect to qualifications. In the past 3 years 86.8 percent of the slots in the table of organization have been filled in the republic, while the assignment for the 5-year period was about 80.5-81.5 percent.

the personnel of USSR Gosbank, a tremendous responsibility for implementing these measures. We must accordingly improve considerably the quality of our performance and achieve a further improvement of Gosbank's role in perfecting the economic mechanism and in the effort to raise the efficiency of socialist production.

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ECONOMIC EFFICIENCY OF CAPITAL INVESTMENTS

Moscow VESTNIK AKADEMII NAUK SSSR in Russian No 10, Oct 79 pp 3-14

[Report by Academician T.S. Khachaturov, chairman of the Scientific Council for the Problem "The Economic Efficiency of Fixed Capital, Capital Investments and New Equipment" of the USSR Academy of Sciences, and discussion of the report: "On the Activity of the Scientific Council for the Problem 'The Economic Efficiency of Fixed Capital, Capital Investments and New Equipment'"']

/Text/ In their decree "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality" (July 1979) the CPSU Central Committee and the USSR Council of Ministers singled out among the measures, which are aimed at the further improvement of social production and its management, the question of accelerating the placement of production capacities and projects into operation and increasing the effectiveness of capital investments.

In the past eight years 860 billion rubles have been invested in the national economy of our country, in other words, half of all the capital investments made during the years of the Soviet Government. What economic impact are these investments yielding and what is the role of science in solving the theoretical and practical problems connected with their use? This question was examined at the meeting of the Presidium of the USSR Academy of Sciences, at which Academician T. S. Khachaturov, chairman of the Scientific Council for the Problem "The Economic Efficiency of Fixed Capital, Capital Investments and New Equipment," delivered a report.

Report of T. S. Khachaturov

The capital investments in the USSR national economic are steadily increasing, characterizing the economy of the country, which is becoming stronger

with each year. The increase of the capital investments for the national economy and by sectors is represented in Table 1.

Table 1

The Increase of Capital Investments Percent
(With Respect to 1960)

Sector of the National Economy	1965	1970	1975	1978
Industry.	139	192	271	314
Group A	142	193	278	326
Group B	118	189	224	253
Agriculture	173	263	417	465
Transportation and communications (all types) .	137	193	309	394
Rail transport.	126	168	219	262
Construction industry	127	256	375	430
Housing construction.	102	142	173	186
Science, culture, art and education	144	185	246	276
Total for national economy.	136	195	273	313

The enormous amount of capital investments in the national economy and its various sectors has yielded an appreciable impact in the form of an increase of the production capacities of industry, the increase of the production potential of agriculture and construction, the development of transportation, the formation of available housing, the material base of science, culture and education. Slightly less than half of the fixed capital existing in the country was created during the Ninth and 10th Five-Year Plans. A considerable portion of the capital investments, in conformity with the decisions of the party and the government, are going not so much for new construction as for the renovation and expansion of operating enterprises (Table 2).

Table 2

Proportion of the Capital Investments in the Renovation, Expansion and
Reequipment of Operating Enterprises in the Total Amount of Capital
Investments in Industry, Percent

Sector of Industry	1960	1965	1970	1975	1978
Electric power engineering.	20	28	20	32	32
Coal industry	62	71	85	78	74
Ferrous metallurgy.	63	61	60	73	81
Chemical and petrochemical industry . .	52	46	45	63	64
Machine building and metalworking . . .	77	76	63	71	77
Construction materials industry	41	51	50	64	69
Light industry.	52	46	40	64	71
Food industry	62	65	66	72	73
Total for production objects.	55	61	58	68	68

The structure of capital investments has improved. It is customary to consider as their conditionally "active" part the expenditures on equipment, tools and implements, while the proportion of the latter in the total capital investments has now increased to 46 percent (as against 12 percent during the First Five-Year Plan) with a relative decrease of the expenditures on construction and installation work from 83 percent during the First Five-Year Plan to 44 percent during the 10th Five-Year Plan (Table 3).

Table 3

Changes in the Structure of Capital Investments for State and Cooperative Enterprises and Organizations (Excluding Kolkhozes), Percent

Years	Construction and installation work	Equipment, tools, implements	Other capital operations and expenditures
First Five-Year Plan.	83	12	5
Second Five-Year Plan	77	17	6
Fourth Five-Year Plan	59	34	7
Eighth Five-Year Plan	51	40	9
Ninth Five-Year Plan.	50	40	10
1976.	46	44	10
1977.	45	45	10
1978.	44	46	10

The increase of nonproductive capital--housing, institutions of science, culture, education, public health and others--during 1971-1978 by 62 percent attests to the increase of the well-being of the Soviet people.

The achievements of capital construction in the USSR are incontestable. However, an analysis made by the scientific council shows that they could have been considerably greater, if the measures on increasing the efficiency of capital investments, which were stipulated by the decisions of the party and the government, had been completely implemented.

The fact that in recent years the growth rate of fixed capital has been outstripping the growth rate of the national income in the country, that is, the capital-output ratio of production has been increasing and the output-capital ratio has been decreasing, attracts attention. In itself the increase of the capital-output ratio does not yet attest to a decrease of production efficiency. The increase of the capital-output ratio can be offset by a reduction of the production cost. But the whole problem is that the increase of the capital-output ratio is being accompanied in far from all cases by a decrease of the production cost. Why is this happening?

There are several reasons. The production cost of raw materials and fuel is increasing, since they have to be extracted at greater and greater depths. Deposits of minerals, which are farther and farther away from the existing industrial centers, are being used, the distance of their shipment, and at the same time the transportation costs are increasing. With the

increase of production sources of raw materials and fuel with a relatively lower content of useful components are being committed to industrial utilization, and their processing is more expensive than before. The expenditures on nature conservation are increasing.

Both the increase of the wages of construction workers and the increase of the prices for construction materials are influencing the increase of the capital-output ratio of production. Wages in construction have increased more sharply than in industry and for the national economy as a whole.

The increase of the capital-labor ratio of industrial workers is surpassing the increase of labor productivity, and this is leading to an increase of the production cost. In 1978 there were 13,000 rubles of value of fixed capital of industry per worker as against 8,000 rubles in 1970, or 63 per cent more, while labor productivity during the same period increased 49 per cent. The effect of not only objective, but also subjective causes, which can and need to be eliminated, appears here. For the increase of labor productivity depends on many factors, among which there are, on the one hand, the power-worker ratio and the level of the equipment being used and, on the other, the use of capital--the organization of labor and its intensity.

What are the other subjective causes, which adversely influence the effectiveness of capital investments?

First of all the changeability of the plans should be indicated. It is necessary to see to it that the five-year plans firmly specify the amounts of capital construction and the volumes of work of construction organizations. Frequent revisions of the annual plans (and thereby of the five-year plans) and the making of numerous adjustments in them have a demobilizing effect on construction collectives.

Construction is being carried out at an excessively large number of projects--there are up to 260,000 production projects alone which are being built simultaneously. At the same time about 4 million workers are engaged in the capital construction of production projects. It turns out that on the average there are only 14 workers per project. About what acceleration of construction, what acceleration of the placement of projects into operation is it possible to speak under such conditions? It is not by chance that the expression "long-term construction" has arisen as applied to projects which have been under construction for an intolerably long time, with repeated violation of all the possible deadlines, instead of completing and putting into operation the project under construction as soon as possible.

Back in the days of my youth, in the 1930's, T. S. Khachaturov said, the intolerability of scattering capital investments among a large number of projects was shown. More than 40 years have passed, but we have still not been able to eliminate the scattering.

Apparently, it is necessary to determine more precisely the forces and potentials of individual construction organizations and not to give them assignments which exceed their capacity.

At the same time the responsibility of construction organizations for turning over projects for operation on the set date and ahead of time, as well as their material interest in this should be increased. There is good experience in this, on which it is possible to rely--the experience of Lithuanian and Belorussian construction workers, who turn over projects on time "fully completed." As a result, in Lithuania and Belorussia the turnover of projects has been expedited, the amount of unfinished construction has been reduced, the number of projects being built simultaneously has been decreased. Such an efficient system made it possible also to reduce the expenditures on construction. Unfortunately, the fulfillment of the plans of construction organizations to this day is often judged by the gross indicators and the amount of invested capital. Therefore, the leading construction organizations may be in a worse situation with the fulfillment of the plan of capital investments than the organizations which work in the old way, spend capital in accordance with the plan, but lag in the placement of projects into operation.

It is necessary to utilize more extensively the economic mechanism and the system of material stimuli for the overall improvement of the work of construction organizations. In particular, we must shift more and more to the extension of bank credit for capital construction instead of outright financing at the expense of the state budget. In the near future the role of long-term bank credit in the financing of capital investments should be increased twofold and more.

Construction practice shows that the completed project, as a rule, is much more expensive than initially specified in the estimate. However, a comparison of what has actually been spent with what was proposed in the estimate with all the adjustments made in it, is not being made. There are no control estimates. It is necessary to introduce the compilation of control estimates, to make an economic analysis of the actual expenditures and to show, due to what an increase of the cost occurred: due to an increase of the prices for materials, due to downtimes, transportation costs or other items.

When evaluating the fulfillment of the plan according to the gross indicators and the expenditures the construction workers might be interested in the use of relatively expensive materials where this is far from justified, for example, in the use of precast reinforced concrete for the construction of simple agriculture projects.

The excessively long periods of the performance of design operations, which prolong the overall length of construction, must be shortened. It is possible to cite the example of the Volga Motor Vehicle Plant, the construction workers of which departed from the widespread procedure of the section-by-section performance of the designing, estimate and construction operations and in part combined the designing and construction in time, which made it possible to shorten the construction period.

The scientific council is in favor of the use of advanced methods in construction. In connection with the building of the Tyumen' Petroleum and Gas Complex the council supports the claim of the inadvisability of using heavy precast reinforced concrete in places where ground transportation has not been developed. The production of precast reinforced concrete requires a large amount of metal and fuel. Monolithic reinforced concrete is cheaper, and it can be produced locally, as can various wooden components.

If all the above-enumerated shortcomings of capital construction were eliminated, the output-capital ratio could have been much higher and with the fixed production capital with a value in excess of 1 trillion rubles (1978) the amount of national income could have been significantly greater than the actual amount.

So far in the report the question has been, by what means to ensure an increase of the output-capital ratio with the given capital investments and with their given direction. But it is possible to increase the effectiveness of investments, having changed these directions.

Capital investments, which have as a goal to eliminate or reduce the non-productive losses of raw materials and materials, are very effective. In particular, the problem of reducing the ferrous metal scraps in machine building and metalworking, which are 19 million tons a year, belongs here. The proportion of the working of metal by cutting is too high and the other methods of working—pressing (stamping) and precision casting—are inadequately developed. The number of machine tools is improporionately great and there is insufficient forge and press machinery. The proportion of sheet in the rolled products is low (40 percent, while it should be approximately 60 percent). The quality of the metal being produced and its durability must also be increased. All this requires considerable capital investments, but they will be quickly repaid. It is possible to reduce sharply the losses of wood by using wood scraps for obtaining wood pulp, wood-fiber and splint-slab board, cardboard and paper; this also requires capital investments. Measures aimed at reducing the losses of agricultural products: the building of elevators, storehouses, cold stores, roads, primary processing enterprises, should yield a great impact. The capital investments for the purpose of reducing the losses of agricultural products will be quickly repaid.

At the last plenum of the scientific council a report on the theme of the proportionality in the development of equipment was discussed and proposals were made which, although they are already well known, it does no harm to repeat. In our country not enough trailers for trucks are being produced and as a result their capacities are being underutilized. The production of pull-type agricultural machinery for tractors is lagging. Of the 3,000 varieties of pull-type agricultural machines that are needed, we are producing approximately 1,200. The ratio between complex expensive modern metalworking machines and ordinary machine tools, which are required for the conventional working of metals, is not always correct. In our country the proportion of manual labor is so far very high. Without the accomplishment

of the extensive mechanization, for example, of loading and unloading operations the increase of production will be complicated. The elimination of such incongruities can provide a very great impact.

In conclusion a few words about how the scientific council operates. It was set up in 1957 and has existed for more than 20 years. In its work it relies on the sector of the effectiveness of capital investments of the Institute of Economics of the USSR Academy of Sciences. Only two staff members are on its staff, and all its basic activity is organized on a public base. Plena of the council are convened approximately 5-7 times a year; the bureau of the council meets each month. The council has 10 branches. It maintains ties with 500 organizations--scientific, production and economic (managerial)--and prepares scientific publications. At present two methods have been prepared for publication: on determining the effectiveness of capital investments in environmental protection and on determining the effectiveness of capital investments in socio-economic measures.

T. S. Khachaturov was asked a number of questions. To the question of Vice President of the USSR Academy of Sciences Academician V. A. Kotel'nikov about what practical effect the work of the council has, the speaker said that a number of council proposals are being used in the practice of managing the national economy, planning and designing. For example, 40 sectorial instructions, which made it possible to substantiate economically the investments in various sectors, have been elaborated on the basis of the developed theory of the effectiveness of capital investments and the Standard Method of Determining the Effectiveness of Capital Investments, which was developed by the council in conformity with it and was approved by USSR Gosplan, the State Committee for Science and Technology and the USSR Academy of Sciences. Vice President of the USSR Academy of Sciences Academician B. N. Petrov asked why little was said in the report on the efficiency of new equipment. T. S. Khachaturov noted that he considered it possible to focus the attention of the meeting participants mainly on the problem of the effectiveness of capital investments, since in the system of the USSR Academy of Sciences there is now a special council for economic problems of the scientific and technical revolution. Academician N. M. Zhavoronkov was interested in whether the council had made and supported proposals which are connected with the transition to planning and accounting not according to the gross production, but according to the net production. The speaker responded that the council had more than once raised such questions before the planning and economic organs. The question of Vice President of the Academy of Sciences Academician Ye. P. Velikhov concerned the utilization ratio of equipment. T. S. Khachaturov believes that it is possible to judge the utilization of equipment from the shift coefficient, which in our country is low and is 1.3 in machine building. Here, he said, it must be recalled that work during one shift has certain social advantages for the Soviet workers. The other questions of the members of the Presidium of the USSR Academy of Sciences concerned the power-worker ratio in the USSR and in developed capitalist countries, the link between the power-worker ratio and labor productivity and so on.

Discussion of the Report

V. G. Tolpygin (USSR Gosplan) singled out from the questions of the effectiveness of capital investments one which concerns the use of construction materials and components. The speaker cited numerical data which attest that the structural shifts in this area (the stepped-up increase of the production of precast reinforced concrete with a relative reduction of the production of monolithic concrete and reinforced concrete and the output of wall materials--artificial and natural stone and brick) are leading to an increase of the cost of construction and, accordingly, to a decrease of the output-capital ratio. The existing recommendations of scientists and USSR Gosstroy are maintaining and even intensifying these trends. And this is taking place under the conditions when the quality of precast reinforced concrete items, given their quite high cost, leaves much to be desired. In a number of instances not only in industry, but also in civil and rural construction the use of components made from heavy precast reinforced concrete items increases the cost of the construction project and lengthens the construction period. Meanwhile, a method of determining the comparable total expenditures on the construction of projects made from various materials, for example, precast concrete, monolithic concrete or brick, has so far not been developed. The council should probably recruit the representatives of planning organizations for formulating such methods.

Deputy Chairman of the USSR All-Union Bank for Financing Capital Investments P. D. Podshivalenko believes that the criticism aimed at capital construction is correct, but, when speaking, for example, about the scattering of capital investments, it is impossible not to see the fact that the coefficient of the concentration of investments since the beginning of the 10th Five-Year Plan has increased from 0.47 to 0.63, that is, there has nevertheless been some improvement in this area. Although the plan for putting projects under construction into operation on the whole is not being fulfilled, the number of built projects and the capacities being put into operation are increasing from year to year and, consequently, there has been an increase both in the fixed capital and in the capacities. The value of the fixed production capital in the country is now more than 1 trillion rubles. This is an enormous amount! Or take all the capital investments during the Ninth Five-Year Plan and the profit which industry received during the same five-year plan. It exceeded the amount of capital investments, exceeded it with a surplus. Although this is not entirely a precise definition of effectiveness, a fact remains a fact.

Capital construction is one of the central problems of the Soviet economy. And for precisely this reason such great demands are being made on it. Without an increase of the fixed capital, without its technical improvement the country will proceed more slowly along the path of scientific and technical progress. In this connection we must note the productive work of the council, which is developing methods for determining the effectiveness of capital investments and other methods. The council is involving banks, Gosstroy and other organizations in this work, and this is correct. The

All-Union Bank for Financing Capital Investments, Gosstroy and all other organizations then use these methods.

The speaker assumes that now it is first of all necessary to study not the question of pricing in construction itself, but the pricing of the components used in construction, first of all the equipment. The point is that with an overall decrease of the prices for machinery the prices per unit of capacity in our country often increase. Further, pricing involves the use of expensive, often scarce materials where less expensive materials, for example, plastics and other chemical materials, could quite possibly be used. It would be desirable in the decree of the Presidium of the USSR Academy of Sciences to invite the council to join actively in the solution of these problems.

As to the use of bank credit as a source of capital investments, for the national economy as a whole it now takes up 8 percent. Probably it is not enough to recommend in general an increase of credit, this must be approached differentially, taking into account that the proportion of the enterprises' own assets as a source of capital investments is constantly increasing.

First Deputy Chairman of USSR Gosstroy G. M. Chentemirov noted that a question of colossal importance for our country is being discussed at the meeting of the Presidium of the Academy of Sciences. He expressed a high opinion of the work of the scientific council on the efficiency of fixed capital, which is coordinating the research on urgent problems of science in connection with the needs of production, and expressed the opinion that the activity of the council has a favorable effect on the entire development of capital construction. At the same time the speaker directed attention to the fact that the decrease of the effectiveness of capital investments, which has been observed in the national economy of the country, is causing anxiety among the Presidium members and all the meeting participants. As G. M. Chentemirov assumes, a number of factors, such as the complication of the conditions of the extraction of raw materials and the shift of the regions of extraction farther to the east and the north, influence this process. The need for the further improvement of the socio-economic and production conditions of the labor of workers and environmental protection requires additional investments. But at the same time there should be other factors of an opposite nature, which are conducive to the increase of the effectiveness of investments. Such factors do exist. They are scientific and technical progress and, first of all, technical progress in machine building, which creates the real part of our productive capital. Participation in the study of many projects, the speaker said, enables me to assert that progress in machine building is being checked first of all by the inadequate level of design work. And the construction workers are suffering due to this.

Here they say: precast reinforced concrete is expensive. Well, why not lay bricks as before? Apparently this is not the solution. What about

monolithic reinforced concrete? That is correct. But special pumps and superplasticizers are required for its extensive use, but they are not yet available. And the manufacturing process of precast reinforced concrete items can be improved, made less expensive and less labor-consuming.

Efficiency, economy and an overall impact in construction can be achieved by the reduction of the weight of buildings and other structures, but a good heater is necessary for this. With it roofing material is also made many times more rapidly than with a conventional heater. An entire series of efficient heaters is necessary. The assistance of other sectors is also required in all this.

As to construction equipment--excavators, scrapers and bulldozers--its unit capacity is increasing negligibly as compared with the increase of the amounts of construction and installation work.

Gosstroy is now engaged in determining its own positions for the next five-year plan. The task is being raised to develop highly productive equipment for the production of precast reinforced concrete. Reinforced concrete also comes in different kinds. In particular, thin-wall and waterproof casings yield an enormous saving of capital. But it is not profitable for the construction workers to use them, for the entire system of the planning and stimulation of labor is based on the "gross." We see here how closely interconnected the questions of economics and technical progress are.

Thus, scientists should devote particular attention to questions of the evaluation of the effectiveness of technical progress in the country and to methods problems of economic encouragement for the introduction of scientific and technical achievements.

Academician N. P. Fedorenko expressed agreement with the main assumptions of the report and reported that the Department of Economics, in addition to work on a comprehensive program of scientific and technical progress, is dealing with a number of other urgent economic problems, particularly the problem of developing machine building--problem number one for all the sectors of the national economy. The council, whose activity is being discussed, has done much to coordinate the research in this and other areas and in the scientific methods management of the planning subdivisions of ministries. Conferences with the participation of management executives, the collections, monographs and methods being published are providing much that is useful. Owing to the scientific discussions held in recent times the different points of view of many scientists have come closer, and collectivism in work has increased. The council has prepared a number of practically important proposals for economic planning and managerial organs.

Corresponding Member of the USSR Academy of Sciences L. M. Gatovskiy also cited the very useful work of the council, which in a number of directions of its activity is close to the Scientific Council for Economic Problems of the Scientific and Technical Revolution of the USSR Academy of Sciences,

which is working out questions of the efficiency of new equipment, the planning, organization and stimulation of scientific and technical progress, its influence on the structure of production and on the development of the material and technical base of our society. The contacts of both councils should be continued and extended.

In the statement of L. M. Gatovskiy it was noted that, given the indisputable significant achievements in the area of the development and dissemination of new equipment in our country, trends are being observed, which attest to the clearly inadequate orientation of capital investments toward the acceleration of scientific and technical progress, the increase of its efficiency and the timely conversion to new technological principles. Appropriate specific examples were cited which, in particular, attest to the decline of the percentage of retirement of obsolete equipment in industry (with respect to the entire park of machinery) and to the considerable exceeding of the standard period of replacement of the machine park, which is very "concessionary" as it is. Tendencies for the proportion of machines of the first three years of production, including the first year, to decrease are noticeable; and in fact the proportion of new equipment is even lower, since obsolete models are young according to the age of production. The fact that only approximately one-fourth of all the new technical developments are based on inventions also attests to the inadequate level of many types of new equipment.

According to available estimates, the proportion of the contribution of scientific and technical progress to the increase of the national income is only 35-40 percent, which far from corresponds to the available potentials which are being created by the development of the basic sciences and which attests to the still uneliminated shortcomings of economic management. Scientific and technical progress, of course, can and should become the main source for the increase of the rate of USSR economic growth.

L. M. Gatovskiy dwelt on the required major adjustments in planning, financing and pricing for the purpose of stimulating the effective acceleration of the replacement of fixed capital and production. Among these ripe measures is the inclusion of indicators of the rate, scale and effectiveness of scientific and technical progress and of the timely supply of production with new highly efficient equipment among the main indicators of the fulfillment of the plan and the evaluation of the work of enterprises, associations and sectors and among the main criteria which determine the levels of their stimulation. Of course, here it is necessary to proceed from standard periods of the updating of production, which are differentiated by types of works.

The development of the completeness of the planning of scientific and technical progress with the intensification of the long-range approach and the consistent implementation of the program-goal method, in combination with the improvement of general economic management requires the creation on the basis of comprehensive planning of all the links of the science-production

cycle--beginning with research and ending with the series production and use of the new equipment--of an integral system of economic indicators in interconnection with the socio-economic impacts: designed, planning and actual. This presumes the planning and accomplishment of the impact of the completeness of the production and use of new equipment with an aim at high ultimate national economic results.

In order to expedite scientific and technical progress and increase its efficiency it is necessary to implement a strictly differentiated approach in planning and stimulation, on the one hand, to the new equipment being assimilated (with allowance made, on the basis of the standards of the periods and costs of its assimilation, for the temporary worsening of the economic indicators at this stage) and, on the other, to the previously assimilated equipment. The more complete reflection in the price for the equipment of the level of its efficiency is necessary: with a reduction of the price per unit of effective result--the increase of the amounts of the markups on this price depending on the impact and the quality. Increasing discounts on the price for obsolete, inefficient equipment up to the transformation of this equipment into unprofitable equipment should be used against its production.

It is necessary to develop a mechanism of the selection of new equipment, which guarantees (given the appropriate stimulation and with the real advantages for fundamentally new equipment) its great efficiency. This requires the introduction of the certification of technical developments according to the criterion of the quality of the equipment, its efficiency and the radical improvement of the system of extradepartmental appraisals.

The urgency of the indicated problems increases the importance of the joint work of both councils for the purpose of promoting the acceleration of the rate of the effective updating of the fixed production capital of our country.

Academician M. A. Styrikovich also stressed the role of the system of planning and accounting in the matter of increasing the effectiveness of capital investments and pointed out that the gross value indicators, according to which the construction workers report, do not aim them toward the saving of materials and the good quality of work. And here it is very important by which method you calculate. The formulation of advanced methods--the Academy of Sciences is responsible first of all for this. The council should devote attention first of all to fundamental methodological questions for the purpose of increasing the effectiveness of capital investments in the national economy.

Vice President of the USSR Academy of Sciences Academician P. N. Fedoseyev believes that the council has done useful work and it is possible to approve it on the whole. Here, he noted, quite a large number of correct views were expressed with respect to the activity of the council, and they must be taken into account in the decree. Here attention should be additionally be devoted to two things.

The first. One of the weaknesses of the work of both the scientific council and our institutions in the area of the study of the effectiveness of capital investments is that the actual effectiveness of capital investments by individual projects and by individual items is being studied inadequately, and this creates difficulties in the attempts to give clear answers to many questions which were raised here. For example, how do you explain that with an increase of the capital-labor ratio the labor productivity is not increasing proportionately? It is possible to solve this question only after studying the actual effectiveness of capital investments and new equipment, the technology and the nature of the organization of labor, the skills of the workers and so on.

And the second. Not only the scientific council, but also the Department of Economics as a whole should study some more the problems of construction, the group of problems which are being discussed today at the meeting of the Presidium of the Academy of Sciences.

President of the USSR Academy of Sciences Academician A. P. Aleksandrov suggested that both the council and the Department of Economics and its institutes should draw the proper conclusions from the held discussion, for, indeed, the scientific research in this direction has not been organized precisely enough and the recommendations of the council are not being utilized well enough when compiling and implementing economic plans.

The activity of the council, the president believes, on the whole is useful. But the council will need to elaborate its own specific point of view on the correctness, for example, of the structure of production and the use of construction materials and components, as well as on other urgent problems of the effectiveness of fixed capital and capital investments. Obviously, today's discussion, A. P. Aleksandrov said, is the start of the examination of these questions by the Department of Economics and its institutes, in order to regulate the scientific work in this area. It will be necessary, without delaying, to examine in the Presidium the question of the efficiency of new equipment.

In conclusion the president thanked all the discussion participants, who made proposals which are important for the improvement of the activity of the council.

Decree

The Presidium of the USSR Academy of Sciences in its decree noted that the scientific council had discussed and made studies of a large number of problems for the purpose of increasing the effectiveness of capital investments.

In the decree, in particular, it is stated that the scientific council actively participated in the drafting of the Comprehensive Program of Scientific and Technical Progress and Its Socio-Economic Consequences in the sections "Complex Problems of National Economic Development," "The

Construction Complex," "Ferrous and Nonferrous Metallurgy," "The Use of Ferrous and Nonferrous Metals" and "Materials." A group of specialists, which was selected by the council, prepared the second edition of "Tipovaya metodika opredeleniya effektivnosti kapital'nykh vlozheniy" /The Standard Method of Determining the Effectiveness of Capital Investments/, which was approved by Gosplan, the State Committee for Science and Technology and the USSR Academy of Sciences. On the basis of this method the ministries and departments have drafted about 40 sectorial instructions, which have been approved by Gosplan. The principles at the basis of "Tipovaya metodika" were also used in "Metodika opredeleniya i sravneniya ekonomicheskoy effektivnosti kapital'nykh vlozheniy stranami-chlenami SEV" /The Methods of Determining and Comparing the Economic Efficiency of Capital Investments by CEMA Member Countries/. "Metodika (osnovnyye polozheniya) opredeleniya ekonomicheskoy effektivnosti ispol'zovaniya v narodnom khozyaystve novoy tekhnike, izobreteniy i ratsionalizatorskikh predlozheniy" /The Method (Main Principles) of Determining the Economic Efficiency of the Use in the National Economy of New Equipment, Inventions and Rationalization Proposals/, which was based on the principles of the calculation of the comparative economic efficiency, which was reflected in "Tipovaya metodika," was published in 1977. During the past period the scientific council has drawn up drafts of a number of methods documents which supplement "Tipovaya metodika."

The most important proposals of the scientific council on increasing the effectiveness of capital investments on the basis of the analytical and research work performed by it reduce to the following.

The improvement of the planning of capital investments, the assurance of the stability of the five-year plans of capital construction, the reduction of the number of projects simultaneously being built and their coordination with the capacities of construction organizations, the concentration of capital investments at construction starts. The completeness of the planning of capital investments, planning by industrial centers, the use of program-goal methods.

The improvement of the system of material stimulation, the rejection of the evaluation of the fulfillment of the construction plan according to the amount of work performed, that is, according to the expenditures of material, manpower and monetary resources, and the quickest possible conversion to evaluation according to the turnover of the built project to the client (the turnover "fully completed"). The substantial intensification of long-term crediting of construction instead of outright financing, the extension of credit to construction organizations for a period up to the completion of construction and settlement with the client.

The reduction of the estimated cost and the materials-output ratio of construction, the revision of the evaluation indicators in a direction so as not to interest the designers and construction workers in overstating the cost of construction by the use of expensive and heavy materials; the

stimulation of the use of light-weight materials, plastics, steel flooring for the light-weight floors of buildings, hollow brick and others.

The elaboration of rational methods of planning and the performance of work on the renovation of enterprises with allowance made for the strict periodicity of the performance of this work, its combination with work on capital repair, the use of special construction machinery which is designed for construction operations under the conditions of an operating works.

The participation of machine building ministries and enterprises in the installation of equipment and projects being built and renovated (sponsorship installation) with final settlement after the start-up of the enterprises, and the increase of the responsibility of contractors and clients to the state for the delivery-acceptance of construction projects with unfinished work.

The improvement of the activity of planning organizations, greater utilization of standard plans, the reduction of the amount of planning estimates. The revision of the proposals on the inclusion of a number of planning organizations in production associations and large construction organizations, on the creation of combined construction engineering organizations.

The extensive dissemination of advanced methods of the planning and performance of construction operations: the method of the Belorussian construction workers, the Orel method, the brigade contract of N. Zlobin and others. The material and moral stimulation of the dissemination of advanced methods.

The proposals of the scientific council were submitted to Gosplan and were used by it when compiling five-year plans of national economic development and forecasts for the long-term future.

The Presidium of the USSR Academy of Sciences approved the work of the Scientific Council for the Problem "The Economic Efficiency of Fixed Capital, Capital Investments and New Equipment" of the USSR Academy of Sciences during the period under review and recommended that the council devote more attention to the discussion of general theoretical questions of determining the effectiveness of capital investments and fixed capital, as well as step up the work on the preparation of a general work on the theory and practice of the effectiveness of capital investments.

It was suggested that the scientific council should consolidate the ties with organizations which deal directly with the planning and financing of construction--Gosplan, Gosstroy, the USSR All-Union Bank for Financing Capital Investments, the construction ministries, as well as with the management organs of the largest construction projects, should regularly examine in the bureau and at the plena of the council the questions of the improvement of the planning, financing and organization of construction, as well as the regulation of pricing in construction.

The council, its branches and the scientific institutions coordinated by it should systematically analyze the actual effectiveness of capital investments and capital construction by sectors, regions and individual major projects, devoting particular attention to the analysis and study of the causes of the high cost and long periods of capital construction, and should provide substantiated proposals on the elimination of the shortcomings; should study more extensively the questions of introducing new materials in construction.

The Department of Economics should increase its attention to the work on the problems of the effectiveness of capital investments. The Institute of Economics of the USSR Academy of Sciences, the Institute of Socio-Economic Problems of the USSR Academy of Sciences, the Central Institute of Economic Mathematics of the USSR Academy of Sciences, the Institute of World Economics and International Relations of the USSR Academy of Sciences and the Institute of Economics of the World Socialist System of the USSR Academy of Sciences should develop in the plans of research work the problems connected with increasing the effectiveness of capital investments. It is recommended that the council should attract the economics institutes of the republic academies more actively to participate in the working out of the problems of increasing the effectiveness of capital investments.

It was recommended that the scientific council make studies on the main questions of the economic efficiency of capital investments in new equipment in conjunction with the Scientific Council for Economic Problems of the Scientific and Technical Revolution of the USSR Academy of Sciences, as well as tighten up the general methods management of the work which is being performed by planning and economic organs on the development of various methods documents and instructions, which are connected with the analysis and calculations of the effectiveness of fixed capital and capital investments, by establishing closer contacts with these organs; improve the monitoring of the fulfillment of the research being performed by branches and institutes on the problem of the effectiveness of fixed capital and capital investments and regularly examine the results of scientific research work at the meetings of the bureau or the plenum of the council.

The active work of a number of branches of the council, particularly the Leningrad, Urals, Tadzhik and Bashkir branches, was noted in the decree. The holding of local conferences by the council, as well as the discussion of the tasks connected with the introduction of advanced know-how were approved.

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AGANBEGYAN ON FORTHCOMING CHANGES IN MANAGEMENT SYSTEM

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 10, Oct 79 pp 3-19

[Article by Academician A. G. Aganbegyan, EKO editor-in-chief: "New Stage in the Evolution of the Management System"]

[Text] The present stage of developed socialist society makes increasing demands on the economic management system. It was emphasized at the 25th Party Congress that the "decisive link" in the pivotal questions of economic policy "will be organization, that is, continued improvement in economic management, in the broadest sense of the word."

In execution of the resolutions of the 25th Party Congress, the CPSU Central Committee in July of this year adopted a decree on further improving the economic mechanism and the tasks of party and state organs. A detailed CPSU Central Committee and USSR Council of Ministers Decree "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Improving Production Efficiency and Work Quality" was simultaneously adopted.

These historic documents mark a new stage in perfecting socialist planning, in the development of the entire system of economic levers and incentives.

Documents Resulting from the Complexity and Dynamism of Development. The Communist Party views improvement in management as the most important component of all activity in leading the economy. Over the past 15 years, beginning with the October (1964) CPSU Central Committee Plenum, much work has been done in the area of improving the management system. In accordance with the resolutions of the September (1965) CPSU Central Committee Plenum, industry has been switched over to a new system of planning and economic incentives. This immediately yielded a significant economic impact. Labor productivity growth in industry accelerated (increasing by 32 percent in the Eighth Five-Year Plan, as compared with 25 percent in the preceding five-year plan). The return on capital began to rise for fixed production assets in industry, whereas it had dropped substantially in the preceding period. Positive advances were also achieved in lowering expenditure norms

for raw and other materials and fuel, the quality of many types of output has been improved, and scientific-technical progress has been accelerated.

At the same time, it is important to remember that improvement in the management system is a dynamic process and not a one-time measure. Life moves on, new tasks are set, and that requires continued improvement in the management system.

Over the past 15 years since the start of the economic reform, substantial advances have occurred in the economic and social development of the country. First of all, the size of the economy has increased. The national wealth of the USSR (excluding land and timber) is currently estimated to exceed 2.1 trillion rubles, including over a trillion rubles in fixed production assets. In the last five years alone, more than 500 billion rubles in capital investment has been made in the national economy. During this same period, the aggregate social product has grown approximately 2.5-fold, and is now more than one trillion rubles.

The main thing is still that the complexity of national economic ties, and thus the complexity of management, has increased considerably faster than the economy has grown in size. In fact, our national economy includes almost 1.5 million different organizations, about 50,000 industrial enterprises (not counting another 200,000 subsidiary enterprises in agriculture, construction and other branches), which produce about 20 million different products. And all this is on an enormous territory and under very diverse conditions.

The entire complex system of national economic ties is continuously changing. The dynamism of economic development will increase even more under the impact of the scientific and technical revolution.

The Target Orientation of New Measures. More than just the national economy has changed. People have changed. Their needs have become more diverse and new tasks of economic and social development have arisen. Two primary tasks which determine our future development have moved to the fore. They are both linked to the necessity of substantially restructuring the national economy.

The first task is to reorient the national economy towards meeting more fully the growing needs of people. Feedback between people's standard of living, on the one hand, and the quality of their work, on the other, has increased sharply. The human factor in developing social production is increasingly dominant: production efficiency and the level of use of the different equipment with which the modern worker and kolkhoz member is provided now depend to a decisive degree on worker skill and on attitudes towards labor. Use of the social factors of increasing labor productivity is therefore one of the fundamental problems of modern economic development in industry and especially in construction, and even more so in agriculture. Vital priorities are changing. Whereas previously the main thing was to meet the urgent need

for food, clothing, footwear and housing, the tasks now being put forward are more complex: meeting a diversified effective demand, foremost for high-quality goods; providing each family with its own comfortable apartment; extensive development of the entire complex of socio-personal and cultural institutions. Demands as to working conditions and the creativity of one's labor have grown immeasurably; people are increasingly gravitating towards obtaining higher educations and using the knowledge thus obtained in their work. Health protection and other such problems have become among the most important social problems.

All the things enumerated above demand a substantial restructuring of production. Immediate, direct concern for the well-being of the people is not just a matter for the branches producing consumer goods. Branches of heavy industry have also begun producing consumer goods on a massive scale. Each ministry, branch, enterprise and organization is now paying more and more attention to the social aspect of management, since all work indicators depend in decisive measure on securing personnel and on their creative activity. Intensifying the role of social factors in the economic development of the country demands a corresponding restructuring of planning and organizing economic activity, and the CPSU Central Committee and USSR Council of Ministers decree on improving the economic mechanism has outlined major measures in this regard.

The second fundamental task of our economic development is the necessity of radically restructuring the economy towards intensification. Thus far, we have been developing primarily extensively, by drawing upon additional production resources. Over the past 5-10 years, embodied labor resources (the fixed production assets, capital investments, amount of raw and other materials) have increased faster than the national income, which is the basic result of social production. Unfavorable processes have been observed in the economy: an annual rather significant drop in return on capital, a reduction in capital investment effectiveness, and a slight increase in material-intensiveness. Intensification, that is, the better use of resources, has thus far been implemented on an economy-wide scale only through an increase in labor productivity, which has provided 75-80 percent of the increment in national income. The rest of the increment has come through increasing the number of workers in material production. In this regard, the rates of labor productivity growth in industry, construction and transport have decreased somewhat over the last three years.

The predominance of extensive factors will lead inescapably to a reduction in the rates of economic development: the annual increment in national income during the Eighth Five-Year Plan exceeded seven percent; it was five percent in the Ninth Five-Year Plan and has been held to approximately four percent during the 10th Five-Year Plan. On the other hand, the predominance of extensive factors causes partial disproportions in the economy which make it difficult to solve economic and social problems: the deficit in particular types of fuel, raw and other materials is aggravated, there is a shortage of capital investment and modern equipment, the manpower deficit

is increasing in many branches and rayons, and the effective demand is not being fully balanced against its being covered materially.

It is especially important to stress that future opportunities for developing the nation's economy through extensive factors are decreasing significantly. In the 11th and 12th five-year plans, the increment in population of working age will decrease sharply. For the first time in our history, the entire increment in social production will have to be provided through increased labor productivity.

The increment in capital investment will be greatly retarded, beginning now, in the 10th Five-Year Plan, and in both relative and absolute terms. This is associated with the necessity of increasing the proportion of the consumption fund in the national income, in accordance with the resolutions of the 25th CPSU Congress and with the necessity of balancing capital investment growth with opportunities for producing rolled metal products, building materials and equipment. In the long range, restrictions on capital investment growth will evidently be even tighter in a majority of branches of the economy as a result of the necessity of redistributing capital investment in favor of the fuel and power branches, whose capital intensiveness is increasing, metallurgy, to overcome the lag there, transport, which has become a bottleneck in developing the economy, and finally, the agroindustrial national economic complex, in accordance with the resolutions of the July (1978) CPSU Central Committee Plenum. Under these conditions, steps to improve the use of existing fixed production assets and each ruble of capital investment will be especially important.

Opportunities for expanding the mining of many types of raw material are also limited, due first of all to the growing capital intensiveness of mining and the necessity of moving into poorer mining-geological conditions in order to increase such production, of utilizing more rugged and remote regions. The necessity of using fuel and raw material more economically therefore becomes a priority item.

As we see, the tasks facing us demand substantial change in the factors of economic growth and reliance on intensifying social production and improving its effectiveness. The fundamental task is to gradually move from a primarily extensive type of reproduction process to a primarily intensive one on the basis of accelerated scientific and technical progress. The directive documents mentioned by us above are oriented towards solving this fundamental task of our development.

Not An Isolated Action, But A Comprehensive System of Measures. The CPSU Central Committee and USSR Council of Ministers decree on further improving the economic mechanism, adopted in July of this year, should be viewed as part of an overall system of party and government measures to improve leadership of the national economy. The measures anticipated by these decrees cover improving national economic planning and perfecting the system of economic levers and incentives in industry and construction. Also anticipated

is a four-month period in which to prepare appropriate proposals for radically improving shipment of national economic freight by all types of transport.

The measures outlined to perfect the economic mechanism are organically combined with previously adopted resolutions on improving the organizational structure of industry, forming industrial and production associations, and changing over to two- and three-link management systems. Similar measures are now being anticipated for construction.

At the same time, quite a few unsolved problems requiring improvement in the organizational structure of management have matured in the nation's economy. The party Central Committee decree adopted in July 1979 instructs that proposals in this area be worked out outlining steps to overcome departmental disconnectedness, to improve branch and territorial management and the organizational forms for actualizing target programs, as well as proposals on increasing the role of the Soviets of People's Deputies in economic development, on broadening the rights and initiative of labor collectives.

The complex of planning improvement measures anticipated in the CPSU Central Committee and USSR Council of Ministers decree is closely interlinked with the resolution adopted last year by the CPSU Central Committee Politburo on increasing the role of the Gosplan and improving its work, which was referred to by Comrade L. I. Brezhnev at the November (1978) CPSU Central Committee Plenum.

Improving the system of economic levers and incentives will depend in decisive measure on improving price formation. Let us recall that the 1965 economic reform in industry was inseparably linked to introduction of the new wholesale price system in 1967. Now, too, improvement in the economic levers and incentives will be based on the new system of wholesale prices to be introduced at the start of the 11th Five-Year Plan.

The selection and placement of economic leadership personnel, improving their skills and training, is an important component of the program of improving the management system. In this connection, the decree adopted in 1977 by directive organs on forming an Academy of the National Economy attached to the USSR Council of Ministers and on the economic training of supervisory personnel is of great importance. Two-year training for supervisory personnel with a break from production at this Academy would provide an opportunity for equipping leaders with a knowledge of scientific methods of management, for training them as important managers. At the same time, the entire system of improving managerial personnel skills has been expanded.

As we see, the reference is to comprehensive improvement in the management system, to up-dating not individual aspects of the economic mechanism, but all of its basic components as a whole, as was anticipated by the resolutions of the 24th and 25th CPSU Congresses.

Improvement In Planning -- The Basis of Everything Else. As is known, the state plan is the primary lever for implementing party economic policy. Improvement in planning is thus to be done so as to orient it more fully towards solving social tasks, towards increasing production effectiveness. That can be achieved if the plan is entirely oriented towards national economic end results, and end results in socialist society have always been the meeting of social needs, and meeting them with minimal national economic expenditures and in the shortest possible period. The fuller orientation of planning towards achieving national economic end results is embodied in the entire system of measures anticipated by the CPSU Central Committee and USSR Council of Ministers decree. The reference is first of all to changing over to target-program planning.

The comprehensive target programs which will be developed and approved within the framework of the long-range plan must contain an interlinked system of measures provided with resources and aimed at attaining a specific national economic end result. Among the top-priority tasks in the near future will be the development of programs to save fuel and metals, reduce the use of manual labor, increase the production of new consumer goods, and also a program for economic utilization of the BAM [Baykal-Amur Trunk Line] zone.

In order to strengthen the social orientation of our plans, it is anticipated that summary sections on social development will be worked out at all levels, from the national economic plan to the plans of specific enterprises and organizations.

In order to take social needs into account more fully in the planning and management process, the role of plan balances is being increased. The lead ministries in producing a given product have been made responsible for meeting all the public demand for that product. The role of the economic agreements by which consumers can influence the shaping of production plans has been significantly increased. The orientation of planning towards attaining national economic end results has caused substantial changes in the system of plan indicators. Among production volume indicators, net (normative) output has moved to the fore and will be used widely in calculating labor productivity. We intend to review in-kind indicators to ensure that they reflect efficiency and product quality more fully. In construction, the start-up of finished projects and amount of finished commodity output have been made the primary indicators.

Increasing the role of the long-range plan is of pivotal importance in improving planning. The five-year plan will become the basic form of planning the country's economic and social development and the basis for organizing the economic activity of enterprises, associations and ministries. In order to improve the scientific substantiation of the next five-year plan, it will now be worked out within the framework of a 10-year perspective, which will in turn be based on a comprehensive program of scientific and technical progress developed by the USSR Academy of Sciences and USSR State Committee for Science and Technology for a 20-year period. On the other hand, the

five-year plan itself will be developed in greater detail for the purposes of observing the most important proportions and unfolding the five-year plan year by year.

Improving territorial planning and combining it intelligently with branch planning are of great importance to perfecting planning work. A group of measures has been outlined here. In the union republics, we will henceforth be working out not only plans for branches of republic subordination, but also the basic indicators of the union republic economic and social development plan, including all enterprises and organizations, regardless of departmental subordination. The economic rights of the republic, kray, oblast and city Soviets of People's Deputies have been broadened. We intend to compile territorial balances for production and distribution of the most important types of output. There will be a changeover to programs to solve large-scale regional problems, to shape and develop the most important territorial-production complexes. Importantly, summary capital construction plans will be drawn up for these complexes.

Taking into account the growing importance of Siberia and the Far East in the nation's economy, the USSR Gosplan has been instructed to review plans for developing and distributing productive forces of the eastern regions and the territorial-production complexes within them, as well as the basic indicators of economic and social development for each complex, regardless of the departmental subordination of the enterprises and organizations comprising them. Consideration is to be given to the opinions of the autonomous republic Councils of Ministers and the kray and oblast ispolkoms when developing these plans.

Within the five-year plan framework, the changeover to stable long-term economic norms is fundamentally new. Among such norms, wages per ruble of output is new for us, and for the industrial ministries, one new norm is profit deductions placed at the disposal of the ministries for capital construction, supplementing circulating capital, forming a single science and technology fund, and for other purposes. Norms on forming economic incentives funds will also be introduced.

The availability of stable five-year assignments and long-term economic norms will permit a new approach to annual planning. Under these conditions, the associations and enterprises themselves will be interested in accepting taut annual plans and will try not simply to meet them, but when possible to overfulfill five-year assignments as well. In fact, if an association or enterprise uses an understated annual plan, in accordance with the economic norms which will be lower in amount in this instance, the workers of that organization, and supervisory workers first of all, will receive a lower wage, fewer incentives funds, fewer funds for sociocultural measures and housing construction, and they will have fewer opportunities for modernizing production. On the other hand, those who accept feasible taut plans which exceed the five-year assignment and who are able to meet them will be encouraged at higher amounts. In this regard, it is very important that the

wage fund savings obtained by enterprises and association which are operating well remain at their disposal to be used, on the one hand, to introduce very considerable additions (up to 50 percent) to the rates and salaries for workers, engineering and technical workers and employees and, on the other hand, to increase the material incentives fund. But if an organization has permitted overexpenditure of the wage fund, that will lead to a corresponding reduction in the material incentives fund and will consequently be reflected directly in the wage level, first of all for supervisory and engineering-technical workers.

The system adopted will enable us to approach the development of annual plans from below, beginning with the associations and enterprises. This will increase the role of counter plans, which are currently completely tied to material resources and included as part of the annual plan. In so doing, the role of socialist competition will grow and new prospects will open up for the creative activeness of the laborers.

Developing the Construction Economy. Very important measures were anticipated in the CPSU Central Committee and USSR Council of Ministers decree section devoted to accelerating the start-up of production capacities and projects and to increasing capital investment effectiveness. A sharp reduction in the number of new projects and in the amount of unfinished construction was outlined. A stable five-year capital construction plan balanced with resources will be approved. The allocation of capital investments to develop production, for example, will be done for a planned increment in the amount of output and services which will permit the unified planning of existing production and new construction.

The system of indicators for planning, evaluating, financing and stimulating construction organizations is also being changed. All this will be done in accordance with the results of assignment fulfillment for the start-up of production capacities and facilities, for producing construction commodity output, labor productivity growth and profit.

En Route to Full Cost Accounting. In the new management system, measures to perfect planning are being organically combined with the development of cost accounting and with strengthening the role of economic levers and incentives. What is new is that cost accounting will be done at enterprises, associations and construction organizations on the basis of five-year plan assignments and long-term economic normatives which guarantee an increase in the resources left at the disposal of production collectives in accordance with improvement in the end results of their economic activity. End results will be considered fulfillment of output delivery plans in terms of products list and in accordance with schedules set forth in the agreements (orders), increased labor productivity, improved product quality, and profit growth.

At present, cost accounting is in many instances formal, due to improper evaluation of results, imperfect wholesale prices and incomplete recording

of expenditures, due to the "free" nature of a considerable portion of the capital investment in enterprises, to privileges in payments for funds, to reduced payments for manpower use, the absence of sufficient contributions for natural resources use, and so forth. These shortcomings will be eliminated with the introduction of the new wholesale price system at the start of the 11th Five-Year Plan. The new wholesale prices will depict socially necessary expenditures more fully and will take into better account the consumption value of the output, its quality and effectiveness. Prices for fuel and manufacturing raw material are to be raised and brought into line with the growing expenditures on extracting them. In this regard, the wholesale prices will take into account the introduction of higher rates of social security contributions (to more fully recompense expenditures on reproducing labor resources), the increase in payments for funds in a number of branches, the introduction of water payments, increased expenditures on recompensing the expenses of geological surveying organizations, the significant growth in per-stump payments to recompense reforestation work, and others.

Profitability levels by branch of the national economy, branch of industry and individual type of output will be considerably equalized. Calculations have shown that it is appropriate to set this level at 12-15 percent relative to production assets. Wholesale prices will be changed so that highly effective output will possess higher profitability and will be advantageous to both producers and consumers. In this regard, the increase will be made through wholesale prices and the financial redistributions within the state sector and will not affect wholesale price levels.

Economic incentives funds (the material incentives fund, the fund for socio-cultural measures and housing construction, and the production development fund) will be generated based on stable normatives approved in a differentiated manner by year of the five-year plan. Higher normatives will be set for associations and enterprises which significantly increase the release of highly effective new output and new consumer goods. It has been established that left-over funds will be carried over to the following year and will not be withdrawn.

Of all the fund-generating indicators, as well as indicators for evaluating association and enterprise activity, it is important to draw attention to the indicator of meeting output delivery obligations for production and consumer goods in the products list (assortment) and within the schedules established by the agreements.

At present, complexities regarding marketing plan fulfillment are largely associated with late calculations on output delivered in accordance with agreements concluded. In the new management system, in order to ensure prompt calculations and greater buyer responsibility for following effective-demand discipline, it has been established that when a payment schedule is not met and a buyer temporarily lacks funds, the payment documents accepted by him will be paid by the bank in the form of loans to the buyer at five-percent annual interest. And if the loan is not paid within 60 days, a higher interest rate will be charged.

Another difficulty in meeting deliveries today is that material-technical supply and transport organizations do not bear a responsibility equal to that of the producer for failing to meet delivery schedules. The CPSU Central Committee and USSR Council of Ministers decree changes the criteria for evaluating the activity of material-technical supply organs: the basic indicator for awarding bonuses to workers of these organs will now be fulfillment of economic agreement and output delivery plans. The transfer of these organs to cost accounting must be completed in 1980. At the same time, the material responsibility of transport organizations for failing to meet agreed-to shipment plans is being increased.

Enterprise and association rights in the area of labor and wages have been significantly broadened. With consideration of the Shchekino method, they have been given the right to pay additions to rates and salaries through wage fund savings. When work indicators deteriorate, these additions are canceled. With consideration of the Aksay experiment, payment of a one-time award through the economy obtained when reviewing labor norms has been outlined to stimulate technically substantiated norms and their prompt review.

We intend to work out and carry out measures to extensively develop the brigade form of labor organization and stimulation, bearing in mind that the brigade form must become the basic one in the 11th Five-Year Plan.

With consideration of the experience in transferring the USSR Ministry of Instrument Making, Automation Equipment and Control Systems, the Glavmosavtotrans and a number of other upper management level organizations to cost accounting, measures have been outlined to considerably strengthen the role of economic levers and incentives as applicable to such organizations. In the 11th Five-Year Plan, as they are ready for it, the industrial ministries will have assignments set them for normative deductions from profit (differentiated by year) incoming for disposal at their discretion to finance plan expenditures to develop production, science and engineering and to generate economic incentives funds.

Orientation Towards Accelerating Scientific and Technical Progress. Measures to increase the role of long-range planning, change over to comprehensive target programs, the rejection of gross output indicators, intensified cost accounting, and so on -- all this will facilitate accelerating scientific and technical progress in and of itself.

At the same time, special measures are also anticipated in the decree on improving the economic mechanism. They are: developing a 20-year comprehensive program of scientific and technical progress; developing programs to solve the most important scientific-technical problems and problems of using natural resources comprehensively. Plans for raising the technical level of the branches are included among the plans of the union republic ministries, departments and Councils of Ministers. An assignment has been made to review obsolete standards within the next two years. The technical level of machinery-equipment and other production equipment being released must be

evaluated in the immediate future. The goal of this evaluation is to raise the technical-economic indicators of items and to withdraw obsolete output from production. A unified science and technology development fund is being created in the ministries and departments on the basis of results of an experiment in the Ministry of Electrical Engineering industry. Steps are anticipated to continue developing the certification system, and wholesale price surcharges are being increased for highly efficient new products and output with the Badge of Quality.

We anticipate completing the transfer of scientific research, design and planning organizations, scientific-production associations and enterprises, to the cost-accounting system of work to develop, master and introduce new equipment on the basis of schedule orders (agreements) in 1980.

Not Waiting And Getting Accustomed To, But Action! The sole response to these most important party and government decrees on perfecting the economic mechanism must be to improve the quality of work of the ministries, associations and enterprises. The top-priority task in raising the level of planning is high-quality preparation for compilation of the 11th Five-Year Plan. Little time remains prior to the start of the next five-year plan, and we must begin now to analyze comprehensively our opportunities and reserves, to refine technical-economic normatives by making them progressive, to provide a thorough substantiation for the development of each collective in the 11th Five-Year Plan.

Drawing up passports for each production association and enterprise will be of important significance in this work and is to be done in 1979-1980. These passports will be used in developing the five-year plan, and it is very important that the indicators filled in on them be thoroughly substantiated.

The decree anticipates basic completion of the transfer of production associations and enterprises to direct economic ties in 1980. Much will depend here on the initiative of the associations and enterprises themselves. This work must be begun without delay.

A major restructuring of the economic mechanism faces us. This is not an easy task and it would be incorrect for each association and enterprise to proceed on the basis of trial and error itself. In fact, each of the innovations contained in the CPSU Central Committee and USSR Council of Ministers decree is based on much practical experience. An extensive experiment was conducted on using net output indicators, the Shchekino system and brigade forms of organization have been widely disseminated, and there is interesting experience in the area of planning and stimulating scientific and technical progress at enterprises of the Ministry of Electrical Engineering Industry, and so on. It is very important that this experience be studied, that its positive and negative aspects be thoroughly analyzed and adapted to conditions at each enterprise. Wise leaders will learn by others' mistakes, not their own. Little time remains prior to introduction of the new management system, and it is very important that this time not be wasted, that we prepare ourselves thoroughly.

The Main Thing -- Achieve Greater Efficiency. As experience in our country and in other socialist countries as shown, comprehensive improvement in the economic mechanism creates additional incentives for increasing the efficiency of social production and accelerating the tempo of economic development.

Here are data for individual socialist countries in the recent past.

Acceleration in the Rates of Economic Development in the USSR, Poland, Hungary and the GDR When Steps Were Taken to Improve the Economic Mechanism.

periods being compared		average annual rates of national income increment, in percent	
		prior to the measures	after the measures
USSR	1966-1970 as compared to 1961-1965	6.5	7.8
Hungary	1966-1970 as compared to 1961-1965	4.1	6.8
GDR	1966-1970 as compared to 1961-1965	3.4	5.2
Poland	1971-1975 as compared to 1966-1970	6.0	9.7

It is evident from these figures that, given improvement in the management system, the rates of economic development increased significantly as compared with data over the previous five-year period.

The new stage in perfecting the economic mechanism in the USSR will doubtless permit an appreciable improvement in the effectiveness of social production and a new upsurge in the standard of living of the Soviet people will be achieved on that basis.

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FINANCING NEW EQUIPMENT IN INDUSTRY DISCUSSED

Moscow FINANSY SSSR in Russian No 11, Nov 79 pp 31-37

[Article by S. L. Sterkin, Candidate in Economic Sciences, A. I. Rutitskaya, Candidate in Economic Sciences, and V. M. Logachev: "Financing the Work to Prepare the Production of New Equipment in Industry"]

[Text] According to the calculations of economists, at the present time a large part of the expenditures connected with the creation of new types of equipment and new technology goes for designing work and for its introduction into production, that is, for the concluding elements of the "research-production" cycle. Among other factors, not only the amount of the funds assigned for these purposes, but also the methods of financing exercise an influence on the speed of the creation and introduction of new equipment and technology. Moreover, the sources of the funds and the methods of transmitting them to the industrial enterprises which are introducing new equipment are of importance here.

K. Marx wrote: "In general, it is believed that the creation of the first model of a newly invented machine costs almost five times more than the creation of the second one."¹ Increased expenditures during the period of the mastery of the production of new equipment are an objective necessity, and their amount increases with the complexity of the equipment, the growth of its series production, and the specialization of enterprises, production workers, and equipment.

The necessity itself for compensating an enterprise for expenditures connected with the mastery of new equipment gives rise to practically no objections, but full compensation by no means always takes place as a result of the limited nature of the branches' financial sources which are designated for these purposes and have been formed until recently according to established norms by means of allotments from the cost of output or from profits.

There is no lack of proposals concerning the determination of the size of these norms for branches as a whole and for industrial associations and individual enterprises. Quite complex schemes are designed for the construction of the norms and the formation of funds for each enterprise which tie their size to the amount of new output produced by this enterprise and to the proportions of output by quality categories.

Until recently there were discussions of the economic nature of the new equipment mastery fund, its purpose, its allotment norms and of the possibility of stimulating with the help of this fund the process of the creation and introduction of new products and new technological processes.

We are inclined to regard the development of new equipment and the process of mastering it as factors of expanded reproduction on an intensive basis. The financial sources for expanded reproduction should be made up of newly created value, or, more exactly, the part of this value which is assigned for accumulation, that is, the surplus product (m). And the category of surplus product gravitates more toward the economic form of the profits of an enterprise, its net income, than toward the cost of output and toward production costs. The formation of the source for financing the process for the creation of new equipment on the basis of the profits of enterprises makes it possible to bring the amount of output costs close to socially necessary labor expenditures.

This question, finally, has found a solution which is the same for all industry in the decree of the CC CPSU and USSR Council of Ministers "On Improving Planning and Strengthening the Influence of the Managerial Mechanism on Increasing Production Efficiency and Improving the Quality of Work."

It seems to us that a differentiation of the norms for allotments to the new equipment mastery fund which are established for enterprises, if this fund is formed on the basis of output costs, cannot exercise a sufficient influence on the economic interests of enterprises for the purpose of accelerating the introduction of new development work. The additional expenditures of industrial enterprises for these purposes substantially exceed the amount of the allotments made by them during the mastery period with the result that a decrease in these allotments does not give the enterprise the possibility of increasing resources during the period of the introduction of new equipment and of improving indicators. In addition, the mechanism for forming the mastery fund according to differentiated norms becomes unjustifiably complex, while a proposal to abolish or decrease allotments in connection with an increase in the production of new equipment comes into contradiction with the interests of branches in increasing financial resources which are assigned for the needs of technological progress. As a result of this, no differentiation of allotments to this fund was made.

When the source for the formation of the fund for financing the development of science and technology is transferred to profits the stimulating significance for production associations and enterprises of a differentiation of allotments for these purposes becomes equal to zero even theoretically. Indeed, allotments to this fund from profits are made in the form of their distribution as total profits are received and have no influence on their amount -- the planning indicator of work and the fund-forming indicator in the accepted system of economic stimulation. With an increase or decrease of allotments to the scientific and technological development fund in accordance with clever scales or other "progressive" norms in relation to the novelty or degree of obsolescence of equipment there is a corresponding decrease or increase in the allotments to the budget from the free remnant of profits, which has absolutely no influence on the economic interests of an enterprise.

In actual practice the proposed scales² become, on the contrary, an "anti-stimulus." It proves to be advantageous for enterprises to increase and not to decrease allotments to the branch funds for financing technological development since as a result of this they get the possibility of keeping in their turnover for a long time funds which have been designated for centralization, or else the time for paying these funds comes later in practice than the time for payments to the budgets and the ministries are quite liberal in their attitude toward late payments with the results that the funds for financing technological progress also perform the functions of temporary financial aid. For this reason, proposals to create single or differentiated norms for the formation of funds for financing the mastery of new equipment for the primary element of management -- production associations and enterprises -- seem to us to be unproductive. Such norms are essential for branches or for large industrial complexes, and in another place we have proposed a methodology for determining them.³

The objects and methods of financing and of extending credit are of decisive importance for stimulating enterprises which are mastering new equipment with the help of finance and credit.

With the existing methods of compensating increased expenditures we have with increasing frequency come up against an unwillingness by enterprises to use the financial resources which have been allocated to them to cover such expenditures during the period of the mastery of new equipment. "Sight should not be lost of the fact that the difficulties of introduction are not in insufficient monetary funds" (we would have written not only in insufficient monetary funds)⁴, although enterprises involved in pioneering mastery should have funds for this before the beginning of the series production of equipment.⁵

The shift to "continuous" methods of planning and financing the entire process of the creation and mastery of new equipment in the electrical engineering industry laid bare imperfections in the methods of compensating expenditures connected with preparing the production of new products and the methods of calculating them. Indeed, during the period beginning with 1969 the amount of production of new output and the amount of products mastered in the branch increased by several times, while during this period the expenditures for the preparation for their production which were calculated in the bookkeeping reports of industrial enterprises decreased (see table).

With the old methods of organizing work on the creation of new equipment the finishing work on it, the development of the technology, and introduction was the work basically of small-capacity designing and technical divisions of industrial enterprises. In 1969 two-thirds of the scientific research institutes and designing bureaus of branches, substantially strengthened and expanded, were put under the subordination of associations and plants. It is these organizations which have now taken upon themselves the basic share of the work to create new designs and technologies and to bring new equipment to the stage of planned readiness. The expenditures connected with the preparation of production which are made by these organizations are counted as expenditures for science and are reflected in the balance of scientific and technical organizations. Whereas in the past the monies of the mastery fund could be spent only at plants or through the instrumentality of a plant (enterprises were allotted money to conclude agreements with scientific research institutes and designing bureaus), now the monies of the single scientific and technical development fund can be allocated to institutes and designing bureaus directly, without mediating elements which slow down settlements and complicate the financing mechanism. As a result of this, with the existing methods of accounting the amount of the funds which are used for the mastery of new equipment has decreased in the accounting records of production associations and enterprises.

The methodology for compensating expenditures by industrial enterprises for the mastery of new products and technological processes which has been in operation until recently is also far from perfection. Thus, in the Basic Regulations on planning, accounting, and calculating the cost of output at industrial enterprises which were approved by Gosplan USSR, the USSR Ministry of Finance, the USSR State Committee for Prices, and the USSR Central Statistical Administration in 1970 nothing is said about classifying under this item (production preparation) overhead expenditures even where this is necessary and stipulated by other instructional materials (for example, by the procedure for determining the cost of experimental output). As a result, when they perform work on reinstalling and adjusting equipment, on manufacturing rigging and experimental models and on tests, drawing production workers away from the production of their

basic output, enterprises receive much less compensation and increase the cost of the production of other products through redistributing overhead expenditures to a smaller amount of basic wages (or to some other lowered base for distributing them).

There are also directly opposed examples in which enterprises classify among preparation expenditures their excess amount of costs, including there the wages of designers and production engineers and, in proportion to their amount, the amount of overhead expenditures in accordance with the percentages which have developed at the plant, while the wages of these technical personnel have already been included among the overhead expenditures of the enterprise.

Nor has there been a methodological solution of the problem of a correct determination of the amount of an enterprise's compensated increased expenditures during the first and second years of the production of new equipment. In the electrical engineering industry for example, the increased expenditures are compensated only in the items "Basic Materials," and "Wages."

A decrease in the amount of compensated expenditures which are connected with the mastery of the production of new equipment increases the cost of the commodity output of an enterprise, worsens its economic indicators, and reduces its interest in the introduction of innovations. Excessive compensation artificially "cheapens" output which was mastered long ago as a result of which there is a growth of the difference between the profitability of old and new equipment and the process of mastering innovations is made difficult.

Consequently, it is necessary to compensate an economically warranted amount of enterprising expenditures for the mastery of new equipment. The expenditures for these purposes have to be clearly classified and their artificial transference to output which has long been mastered (and also from output long ago mastered to new output) as a result of imperfections in the system of financing the preparation of production has to be prevented.

Until recently all of the expenditures for preparing the production of new products which are the cost evaluation of the work of an enterprise which is mastering new equipment "did not participate" in the formation of the cost indicators of their amount and effectiveness: commodity and sold output, labor productivity, profits, profitability, and so forth.

Under these circumstances cost accounting enterprises tried "not to have" expenditures for the preparation of production; that is, not to receive subsidies from the mastery fund, but to cover their expenditures through

price for which purpose the planning calculations for new output were overstated, and the endeavor of enterprises to overstate prices was strengthened. They also tried to cover their expenditures for the production and testing of experimental models and of rigging not on the basis of the financial resources allocated to them for these purposes, but by means of selling the above products and services to developer institutes. The proceeds from the sale of such output is taken account of in the amount of a plan's output with a definite profit which is established on the level of the profitability for basic output (from 10 to 20 percent of planned costs). With these programs the orientation points of overall direction of the financing sources changed. Previously the monies of the fund went from plants to institutes and enterprises paid for the work of scientific research institutes and designing bureaus which was connected with the creation of new products on the basis of economic contracts. Now institutes pay enterprises from the single scientific and technical development fund for their work to prepare the production of new products.

Table 1

**Динамика производства новой техники и величина средств,
1. затраченных на подготовку ее производства на предприятиях
Министерства электротехники**

	1968 г.	1969 г.	1970 г.	1971 г.	1972 г.	1973 г.	1974 г.	1975 г.	1976 г.	1977 г.	1978 г.
2. Количество вновь освоенных изделий (шт.)	535	790	1198	1248	1270	1290	1467	1767	1621	1657	1703
3. То же в % к предыдущему	100.0	148.0	152.0	104.0	102.0	102.0	114.0	120.0	92.0	102.0	103.0
4. Удельный вес продукции высшей категории качества (с 1975 г. — со Знаком качества)	12.2	13.7	14.3	22.2	32.0	40.0	38.0	32.5	35.1	38.5	42.7
5. Финансирование подготовки производства новой техники на предприятиях (млн. руб.)	86.1	42.4	30.2	20.7	24.6	32.4	46.2	54.7	68.9	77.8	68.8
6. То же в % к предыдущему году	100.0	49.0	71.0	69.0	119.0	132.0	143.0	118.0	126.0	113.0	88.4
7. То же в % к 1968 г.	100.0	49.0	35.0	24.0	29.0	38.0	54.0	64.0	80.0	90.0	79.9

Key:

1. Dynamics of the Production of New Equipment and the amount of funds spent to prepare for its production at enterprises of the Ministry of Electrical Engineering Industry;

[Key continued on following page]

2. The number of newly mastered products (units);
3. The same in percentage of the previous year;
4. The proportion of highest quality category (since 1975 -- with the Token of Quality);
5. Financing the preparation of the production of new equipment at enterprises (millions of rubles);
6. The same in percentage of the previous year;
7. The same in percentage of 1968.

Industrial enterprises were not interested in the wide use of direct appropriations from the new equipment mastery funds, but tried to compensate high expenditures during the period of production preparations on the basis of overstated prices and of selling experimental models and work of an industrial character to outside clients (as a rule, developer institutes).

In the electrical engineering industry with an absolute increase in the amount of the production of new output of almost four times in 1978 compared to 1968, the amount of the financing resources for these purposes which was allocated directly to enterprises decreased and came to 80 percent of their amount in 1968. The sharpest decrease of these expenditures relates to 1969-1971 during which time there was an adaptation of the enterprises to the new system of financing and a unique mimicry by them under the changed economic conditions of economic management.

The lack of interest by enterprises in receiving direct subsidies from the ministerial financing funds was also expressed in an annual substantial failure to use monies allocated in the Ministry of Electrical Engineering Industry for the preparation of the production of new equipment. In addition, an "increased demand" was made by enterprises with unbalanced production and material and technical supply plans and by poorly operating associations and enterprises which did not fulfill their plans for costs and profits.

In the above-cited decree it is established that expenditures for the preparation of the production of new equipment which are financed from special sources will be taken account of within total output.

In the opinion of many economists, enterprises should be compensated for temporarily high socially necessary costs connected with mastering the production of and using new equipment, including expenditures for the training of cadres and for losses from their temporary low work load.⁶

Expenditures for preparing the production of new equipment which are compensated from special sources have to be included both in commodity (net) and in sold output, which will make it possible to take account of the corresponding work in the labor productivity indicator.

With a shift by organizations and enterprises of industrial ministries to a cost accounting system of organizing work on the creation, mastery, and introduction of new equipment and with financing from the single fund for the development of science and technology it becomes necessary and possible not only to compensate enterprises for expenses for preparing the production of new equipment, but also to establish a price for such work with a definite profitability norm.

An attempt was made to solve these problems in a number of normative documents which were recently published and which regulate the methods of managing the creation and mastery of new equipment in individual branches and at individual types of enterprises. Thus, scientific production associations were permitted to include in the amount of sold output the cost of experimental models and experimental consignments of products (materials) which were produced by a scientific production association on the basis of monies for mastering new equipment after these products had been shipped to the client and paid for by him. The cost of the experimental models and parties includes the actual expenditures for production and normed profits for the given group of output. This kind of entry in the normative documents does not solve but confuses the question of taking account of work to prepare the production of new products in the cost accounting indicators of an enterprise's work.

Experimental models which are manufactured with a client's monies, regardless of the source from which the latter received them have always have for enterprises and associations the character of output produced for one-time orders. In determining the price for this output profits are planned which are equal to the planned profitability of the basic output or of the enterprise as a whole, but not less than 10 percent and not more than 20 percent of the cost.

After the shipment and payment for an experimental model or any other product which has been manufactured for a one-time order, its cost is included in the amount of sold output. Planned costs and normed profits are returned to the producer through price. In general, however, in accordance with the existing instructions on the financing of work on new equipment, enterprises were compensated for actual costs within the limits of the plan. The latter condition occurred in the above-cited formulation on the procedure for covering expenditures to produce experimental models in scientific production associations, which can be regarded as a commitment to compensate any expenditures for this work, including non-productive ones which are caused by poor organization.

In establishing the price for an experimental model, as well as for a product which is produced for a one-time order, profits can be established which are equal to the profitability norm of the enterprise as a whole, that is, for example, for the electrical engineering industry as a whole

in 1978 — approximately 16 to 17 percent — and for individual enterprises — 20 percent of the cost of output. In accordance with the rules which regulate the work of scientific production associations, this profit cannot exceed a norm which is equal in the branch to 12 percent.

The above-cited documents do not define whether the cost of experimental models is included within commodity output, whether it is taken account of when output is determined, or whether it is accounted for within so-called "other sales," that is, output which is not part of the basic work of the enterprise (subsidiary enterprises, non-industrial services, and so forth).

As has already been stated, enterprises themselves found a solution to the problem of the most convenient, from the point of view of their cost accounting interests, system of realizing experimental models which have a "commodity form," that is, which are materialized in metal.

The task of stimulating the mastery of new equipment with the help of the financial mechanism was formulated much more broadly. It has been established that all expenditures of an industrial character which are connected with mastery and introduction should be included in an enterprise's volume of output with the addition of normed profits. In our opinion, the instructional materials which will be worked out for defining the rules for including mastery expenditures within an enterprise's output should clearly define that the cost of such work is taken account of within net and sold output, and the procedure for establishing a net output norm should be defined. It would seem useful to establish profits in relation to the cost of such work on the basis of an increased profitability norm of the corresponding groups of output.

At the present time a markup is established to the wholesale prices for new output whose amount depends upon the effectiveness of the output, that is, the relationship between the upper limit of price and the lower limit and mastery expenditures. With a quite high effectiveness the markup which is established to the price will be equal to 1.25 of the profitability norm (15 percent of costs for the electrical engineering industry) and a price and markup which yields 27 percent profits is established. We propose the same method of determining the profits norm for expenditures on work to prepare the production of new output, classifying it conventionally among the most effective new output.

It has to be clearly defined in the instructional materials that this evaluation and its inclusion in the indicators of an enterprise has to be performed for all work of an industrial character: for the production of experimental models and of the first industrial series, output and materials tests, the production of an original set of rigging, tools, and the reinstallation and the readjustment of equipment.

In a similar manner, it is also necessary to compensate the increased expenditures of enterprises during the first and second years of the production of output.

It has to be clearly established that this inclusion of expenditures is performed regardless of the physical location of the "object of the investments" -- the output; that is, it is necessary to remove the completely unjustified restriction demanding the mandatory shipment of the output to a client in order for its cost to be taken account of within sold output. In fact, as has been shown, if there is a concrete client and the output is shipped to him, enterprises themselves correctly solved the problem of equating an experimental model to output sold at a one-time price. But experimental models are frequently manufactured not for outside sale, but for tests, for working out technology, and so forth, and there is no place to send them -- the further career of these products has to occur at the producer plant. This applies to an even greater extent to work connected with producing rigging, reinstalling equipment, and so forth. In ordinary life there is no act of the "alienation" of such output from its place of production, that is, in this case shipment, just as this does not occur with work on capital and average repairs for equipment, which does not prevent the latter from being paid for and correctly calculated.

Consequently, it is necessary to include costs connected with preparing production not in the total commodity (net) output of an enterprise upon the completion of the work stages stipulated by the plan, but in the total sold output after the transference of monies to the enterprise's current account.

The necessity and possibility now exists in preparing the production of new products, especially mass and series production, of planning the mandatory use of monies from the single scientific and technical development fund for the performance of the corresponding preparatory operations and for compensating increased expenditures during the first years of production. Price setting agencies have to demand from an enterprise when prices are established information on expenditures for the preparation of production which have been financed from the single fund or made on the basis of bank credit and take account of the amount of the subsidies when prices are established. The planning of the amount of monies for the preparation of production should be done on the basis of especially developed norms or analytic calculations, and the use of the monies planned for these purposes should have the character of the fulfillment of a plan for a mandatory products list. The failure to use allocated monies or their partial use is permissible and should be encouraged only when the new equipment mastery plan is fulfilled. In our opinion, such mandatory (compulsory) subsidies and their correct consideration in the work indicators of enterprises will help to neutralize the endeavor of the latter to

overstate prices for new output and will greatly strengthen their interest in mastering innovations.

The compensation of increased expenditures from a special fund is necessary in organizing the series and mass production of equipment for which there is no direct client. This kind of output is produced for many consumers and, for this reason, the functions of client are performed by the ministry which is in charge of the producer and is responsible for the organization of the production of equipment and its technical level.

It seems to us to be completely unrealistic to have a mechanism in which for the creation and introduction of new equipment the consumer's plan will provide for the transference to him of monies from the production branch's fund.⁷ This kind of situation would remove or decrease the responsibility of producer ministries for mastering new equipment at their enterprises and would, in general, mean the elimination of the fund for financing the mastery of new equipment as a branch source by turning it into an interbranch and universal source for new equipment whose management would necessitate an independent and cumbersome agency.

Finally, given the scarcity of resources, their division and transference outside of a branch would make it impossible to redistribute them, concentrate them in the most important directions, and arrive at a substantiated determination of the amount of mastery expenditures.

There are proposals in the literature to the effect that all expenditures (M. V. Romanovskiy), including expenditures for designing and planning, should be included in an enterprise's commodity and sold output when new equipment is mastered. It is proposed that this kind of inclusion be performed for individual stages which have been paid for by the client or for which credit has been extended.

A simple solution of the question of including expenditures for scientific research work in the commodity output of an enterprise seems to us to be incorrect. The expenditures of institutes and designing bureaus which are on an independent balance should not be included in the production volume and output sales of a producer enterprise even when the costs are covered, along with the sale of a product, on the basis of the client's monies. This opinion of ours is based on a conception of the heterogeneity of the expenditures and of the "commodity" character of the product of scientific organizations and enterprises, and also of the simplicity of "regulating" the amount of the cost of the services of scientific organizations by means of relegating to it the expenditures of co-executors and contracting agents and the expenditures for research work. A similar situation exists with the expenditures of scientific and technical subdivisions which are a part of enterprises but are members of the so-called

"non-industrial" group or of other subdivisions which are constantly engaged in scientific research and development the expenditures for which are covered from special sources (which are reported in form 2-H -- abbreviated).

Expenditures for the maintenance of designers and production engineers who provide for basic production and are numbered among the general plant personnel are relegated to the cost of output and included in the item "General Plant Expenditures" and, for this reason, it is not necessary to compensate them from special sources.

In addition to the lack of a solution for the theoretical question of the character of labor in the various institutions and subdivisions which are in the sphere of science and of the character of their output, the inclusion of all expenditures for science, designing and planning in the cost of a commodity is hindered by the lack of clear regulations for the various types of scientific research (basic, applied), the fact that methods have not been worked out for a sufficiently exact determination of their cost, the lack of uniform procedures and forms of the completion of research, and also the necessity for carrying out a number of organizational and economic measures which make possible sufficiently exact planning for these expenditures and their reliable calculation. In addition, it is difficult to solve the question of the "commodity nature" of the expenditures for scientific work which ends with a negative result, for various kinds of alterations, for additional research and tests, for scientific work which has to do with a number of products, and not with a single type, and so forth. In connection with this, the 'instructional materials which regulate the rules for including the cost of work for mastering and introducing new equipment in the amount of output should contain a sufficiently clear definition of the concept of "work of an industrial character" for various types of enterprises and various methods of organizing scientific and designing work at them.

The question of the necessity and possibility of a substantial expansion of credit for expenditures to create and master new equipment is being quite widely discussed. Data is cited on a decreased share of bank loans in the total amount of expenditures for new equipment. Methods of providing credit for science have as yet practically not been developed. Arguments are cited to the effect that "credit is incompatible with economic risk."⁸

The question of the objects and types of credit for the creation of new equipment, the amount of interest, and the sources of compensation can not be looked at without defining the goal of credit and its place in the overall financial and credit system of industry and without developing a system for financing science and technology. "The basic reason for the undeveloped nature of long-term credit," writes B. G. Bunich, "is

in the extensive possibilities for obtaining budgetary and similar sources which are better provided with material resources, free collectives from bank control, and are sometimes issued with less strict economic demands."⁹

The changes proposed above in the system of compensating the expenditures of industrial enterprises for mastering the production of new products will demand a definite increase in the resources which are assigned for these purposes. Part of them can be obtained through expanding credit for the expenditures of industrial enterprises to master new equipment. It would probably be useful to ease the terms and methods of making and writing up loan and the terms for its repayment. The loan repayment period should be tied in with the normed time for mastering new equipment by "stretching" the credit repayment schedule beyond the limits of the time for mastering output which is established according to norms; that is, limit the writing off to the cost of commodity output during the planned period for the mastery of new equipment of not all lump sum expenditures which are credited by the bank, but a part of them (for example, 50 percent). The remaining, uncompensated part of the expenditures of future periods should be relegated to the cost of already mastered output after its level becomes lower than the planned level, which will slow down the sharp decrease in the cost of new output immediately after the full mastery of its production. Write-off schedule norms could be worked out for the increased expenditures and for the repayment of credit after the complete mastery of production (for example, they could be established within the range of from one-half to a full normed period for the mastery of new output), while at the same time increasing the interest on credit. Permission should probably be given to assign for the repayment of credit a part of the enterprise's development fund, and also the economized part of the appropriations from the single scientific and technical development fund which are allocated for preparing the production of a different product at the same enterprise.

It seems to us that a correctly functioning system of financing and crediting industrial enterprises which master new equipment will make it possible to greatly strengthen the economic interest of industrial enterprises in renewing output and will be an effective accelerator of scientific and technological progress in industry.

FOOTNOTES

1. K. Marx and F. Engels, "Works," Vol. 23, p 416.
2. See, for example, the book "New Principles of the Cost Accounting Stimulation of Technological Progress in the Branches of Industry," MGU Publishing House, 1975, pp 62-63.
3. See, for example, PLANOVYE KHOZYAYSTVO, No. 2, 1976.

4. U. Yu. S. Nekhoroshev, "The Use of Economic Forms in the Production and Sale of the Products of Applied Science," Tomsk Polytechnical Institute imeni S. N. Karov, Publishing House of Tomsk University, Tomsk, 1974, p 224.
5. Ibid, p. 214.
6. See, for example, L. N. Gatovskiy, "The Economic Problems of Scientific and Technological Progress," Moscow, Nauka, 1971, p. 337; G. V. Bazarova, "Profits and Cost Accounting Under the Conditions of Scientific and Technological Progress," Moscow, Finansy, p. 124.
7. G. A. Tsaritsyna, "Economic Stimuli as a Lever for Managing Scientific and Technological Progress in Associations and at Enterprises. (Theses of a report at a practical scientific conference "The Management of Scientific and Technological Progress in Associations and at Enterprises"), Moscow, Institute of Economics of the USSR Academy of Sciences, 1975, pp 15-16. Similar materials in L. N. Orlova, "The System of Compensating Expenditures for Mastering the Production of New Equipment," transcript of a dissertation for the scholarly degree of Candidate of Economic Sciences, Moscow, Institute of Economics of the USSR Academy of Sciences, 1971, p 15.
8. "Scientific and Technological Progress and the Effectiveness of Social Production," Moscow, Nauka, 1972, p 537.
9. "The Mechanism of Economic Stimulation Under Socialism," Moscow, Ekonomika, 1973, p 49.

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INDUSTRIAL PLANNING TECHNIQUES DISCUSSED

Planning the Economic Effect

Moscow EKONOMICHESKAYA GAZETA in Russian No 49, Dec 79 p 18

[Article by B. Zaytsav, Doctor of Economic Sciences: "Planning the Economic Effect"]

[Text] In the five-year plans for industrial ministries, associations and enterprises, an index will be approved for the next five-year plan for the economic effect realized from the carrying out of scientific technical measures. It is our opinion that the questions concerned with computing and planning this index warrant serious discussion, since methodological materials for planning and computing this index are presently being prepared.

Selection of Measures

First of all, it is necessary to define more precisely a number of scientific-technical measures, the carrying out of which will make it possible to plan the economic effect to be realized, with the required degree of validity. All of the scientific technical measures carried out in associations and enterprises can be sub-divided into three groups. These are scientific studies and developments; works concerned with mastering new types of products; the use of highly efficient technological processes, mechanization and automation equipment and control methods and the organization of production and labor.

Certainly, the economic effect must be reflected in the economic accountability indices for the activities of ministries, associations and enterprises. In addition to raising the validity for planning the new index, this will also make it possible to coordinate the index with other economic accountability operational results.

The economic effectiveness of scientific studies and developments is evaluated based upon the results realized by the national economy from the

use of created machines, units, technological processes and materials. The economic effect computed during the initial stages of scientific research and experimental-design work is in essence a forecasting or anticipatory index. This effect does not influence the economic accountability results. The actual effect from the realization of developments will be manifested in the second and third groups of the above-mentioned measures.

The economic effect obtained from new types of manufactured products is computed in conformity with active methodological statutes and taking into account the savings realized by the consumer. In terms of the new means of labor, this savings is formed by raising their productivity, lowering the expenditures of raw materials and energy and decreasing the capital investments required for placing these means in operation. The savings realized by the consumer is considered for the entire service life of the machines and equipment. The new objects of labor ensure a savings owing to a reduction in the expenditures of material resources and in the cost for live labor.

Moreover, the same machines and materials produce different savings among the consumers in different branches of the national economy and at enterprises of a similar profile. The use of ammonia production units having a capability of 410,000 tons annually and produced by plants of Minkhimash [Ministry of Chemical Machinery Manufacture] has made it possible, taking into account the various operating conditions, to lower production costs at the Novomoskovsk Azot Production Association by 20 percent, at the Severodonetsk Azot Association by 29 percent and at the Bereznikovskiy Nitrogen Fertilizer Plant -- by 41 percent.

Moreover, the number of consumers for individual types of products is measured in the tens and hundreds. The required data is not always available for planning the economic effect to be realized from the production of a new product.

The effect achieved through the use of a new item of equipment is realized by its producers by means of an incentive bonus added on to the wholesale price, assuming that the item of equipment is highly efficient and warrants such a bonus. At the same time, a portion of the national economic effect embodied in the bonus or additional charge affects the economic accountability results of the producers and is reflected in their balance profit. On the basis of measures aimed at improving the economic mechanism, it has been established that such incentive markups are not being taken into account in the plan. Nor do we consider it possible for a portion of this effect to be approved in the form of a planned task. In addition, this will make it possible to avoid having to consider repeatedly the national economic effectiveness of new equipment for both the producing enterprises and the consumers.

The economic effect obtained from the use of new technological processes, mechanization and automation equipment and from methods for organizing

production and labor is determined based upon the difference between the value for the reduction in production costs, realized from the use of new innovations, and the normative profit obtained from capital investments used for their introduction into operations.

Thus we are speaking here of planning an effect which takes into account the savings in total social expenditures and not just that portion which is formed as a result of a reduction in production costs alone. At the same time, the component elements of these expenditures are manifested in the economic accountability indices. The economic effect, for example, is linked to the task for raising labor productivity through a wage savings, which is reflected in reduced production costs. It is our opinion that the advantage of such an approach lies in the fact that the required unity is ensured in the computations of the effect, based upon the methods employed for determining the effectiveness of new equipment during all stages of its creation: development, production and use.

The available opportunities for reflecting expenditures and the results obtained from raising the level of production and for computing the overall savings in live and past labor serve, in our opinion, as objective prerequisites for planning by the ministries, associations and enterprises of the economic effect which forms as a result of the use of new equipment.

Accepted Standards For the Effect

Great interest is being displayed in an analysis of the results realized from the introduction of new equipment, results which are directly associated with an evaluation of the activities of associations and enterprises. If we use an extended period of time, then our computations indicate that the most stable index of effectiveness is the ratio between the annual economic effect and net output. (For analytic purposes, it was computed as the sum of profit and wages in the branch; with the introduction of normative net output, the computations must be prepared on this basis). For USSR Minchermet [Ministry of Ferrous Metallurgy], this ratio fluctuated within the limits 0.026-0.028 during the past few years. In other words, for each ruble of net output there were 2.6 to 2.8 kopecks of annual economic effect realized from the introduction of advanced technology, mechanization and automation equipment and methods for organizing production and labor. At light industry enterprises and associations, this index fluctuated within the limits 0.019-0.021 and for the construction materials industry -- from 0.025 to 0.027. A relative degree of stability in the values for annual economic effect and net output were noted in the machine-building branches. For Minavtoprom [Ministry of the Automobile Industry], it fluctuated between the limits 0.026 and 0.034, with the highest reading during the past 4 years being on the order of 0.028-0.029. During the 1976-1978 period, this ratio was 0.034-0.035 for associations and enterprises of Minstankoprom [Ministry of the Machine Industry].

An analysis of the essence of and method employed for determining normative net output reveals that the ratio for annual economic effect will also be stable with regard to normative net output.

Thus it is our opinion that planning for the economic effect realized from the carrying out of scientific-technical measures can be carried out based upon the inclusion in the five-year plans of a normative economic effect per ruble of normative net output, with a breakdown by years. USSR Gosplan can determine this normative for the ministries as a whole and the latter -- can approve individual normatives for the associations and enterprises.

During the preparation of the annual plans, the associations and enterprises, based upon the planned volumes of normative net output, determine the tasks for the annual economic effect (in rubles). The implementation of the measures called for in the plan, directed towards raising the technical level of production, must ensure its fulfillment.

Planning for the economic effect achieved from the carrying out of scientific-technical measures, by years of a five-year plan, will promote greater economic responsibility on the part of associations and enterprises with regard to improving the technical level of production. At the same time, this constitutes an order calling upon the scientific-research and planning-design organizations to create new equipment having definite technical-economic parameters which will make it possible to achieve the planned volumes for the economic effect.

Taking Into Account Expenditures and Results

With the introduction into the system of planned indices for the economic effect to be realized from the carrying out of scientific-technical measures, special urgency is attached to taking into account the actual expenditures associated with the introduction of new technological processes, mechanization and automation equipment and methods for use in organizing production and labor.

Consideration of capital expenditures does not involve any special complications. Such expenditures include the cost of new equipment, including expenses for its assembly, installation and adjustment; the cost for the construction of new and the modernization of existing buildings and installations, required for the operation of new equipment; expenses for technological equipment having a service life of more than 1 year and the cost of which exceeds 50 rubles. These expenditures in financial operations are reflected as expenses for a specific measure and in bookkeeping accounting they are singled out by means of a separate line.

The calculation of current production costs for each item of new equipment is considerably more complicated. The experience of individual associations and enterprises has shown that such costs should ideally be taken into account in terms of expenditure items and elements, which change during the

course of introducing new innovations into operations, or in terms of the accounting production cost per unit of output produced with the aid of new equipment. Direct accounts can be used for applying the appropriate expenditures to specific measures.

An improvement in the methods used for calculating the actual current expenses by items of new equipment must be directed towards achieving a maximum increase in the proportion of direct expenses embodied in the production cost, together with an accurate distribution of the overhead expenses. They should ideally be distributed proportional not only to wages but to several production factors, for example the production area, the complexities involved in carrying out repairs on machines, the number of workers, the principal wage of production workers. In accounting procedures, importance is attached to reflecting throughout the year the total amount of profit obtained from lowering production costs through the use of new innovations. It is considered necessary even to open up the sub-account entitled "Profit and Losses From the Introduction of New Equipment."

Capital and current expenditures for a specific measure and for new equipment can be determined provided all of the departments participating in the implementation of the measure write off appropriate expenditures in connection with the measure. If the expenses for all items of expenditure are clearly reflected, there will be less of a requirement for special effectiveness computations; the accounting data will be sufficient.

In statistical reporting, importance is attached to revealing the expenses required for carrying out scientific-technical measures throughout the year and for each measure on the whole, with the expenditures of past years being taken into account. In order to analyze the influence of the effectiveness of new innovations on the operational indices of enterprises, it is necessary to have available data on the effect obtained during the year under review and computed for a year.

Counter Planning Discussed

Moscow EKONOMICHESKAYA GAZETA in Russian No 49, Dec 79 p 8

[Article: "Force of Counter Planning"]

[Text] The collective of the Vladimir Elektropribor Plant has accumulated a great amount of experience in counter planning. In 1976, it commenced undertaking and carrying out plans in excess of the tasks established in the five-year plan. This matter is discussed in the following article by the plant director, Dannil Borisovich Rapoport.

A graduate of the MVTU [Moscow Higher Technical School] imeni Bauman, D.B. Rapoport began his work career at the Motor

Vehicle Plant imeni Leninskiy Komsomol. He subsequently worked as a department head at Uralmashzavod [Ural Heavy Machinery Plant] and as the chief of production and the director of the Murom Plant imeni Ordzhonikidze. Since 1962 he has served as the director of the Elektropribor Plant.

It is already clear that during the Eleventh Five-Year Plan the collective of the Elektropribor Plant will further pursue the experience it has accumulated in counter planning. Its role with regard to improving the economic mechanism has been emphasized in decisions handed down by the party and government. At the present time, importance is being attached mainly to carrying out successfully the Tenth Five-Year Plan.

In view of the great requirement of the national economy for goods produced by the enterprise during the 1976-1980 period, a production volume increase of 72 percent was planned for the plant. At the same time, the task was assigned of raising labor productivity sharply, increasing the capital-output ratio, lowering the production costs for goods and increasing profits. In order to cope with the plan for the five-year plan, we developed and are implementing a specific program for the use of internal reserves. The counter plans undertaken annually by the collective are considered to be of invaluable importance for the carrying out of this program. These plans possess a tremendous mobilizing force. The manner in which they are being fulfilled is borne out by the following data (in percentages of 1975):

Years	Production Volume			Labor Productivity		
	Task of Five-Year Plan	Counter	Actual	Task of Five-Year Plan	Counter	Actual
1976	112.2	112.25	112.3	109.4	109.4	109.4
1977	124.7	126.9	127.2	119.1	120.5	120.8
1978	137.7	146.9	149	130.4	137.5	139.6
1979	151.8	165.9	167	143	152.6	153.3
		(Expected Fulfillment)			(Expected Fulfillment)	

In the case of the capital-output ratio, it will also increase more rapidly than the rate called for in the five-year plan. In 1979 the plans called for its level to be raised 12.2 percent above the figure for 1975; the counter plan called for an increase of 28.6 percent and, as expected, it amounted to 29.2 percent.

The adoption of the counter plans was favored by the fact that the branch ministry approved a stable five-year plan, with a breakdown by years, for the plant. Thereafter, it was not changed substantially. Only at times, when the actual results achieved by us were taken into account, results which exceeded the figures initially planned, did a basis exist for

increasing the workload from above. Rather than waiting for such corrections, we introduced and are continuing to introduce them ourselves. In this manner, we are striving to ensure that the production program is always tense and realistic. Thus the annual plan is composed at a low level, with suggestions made by the workers of the enterprise being taken into account.

Nomenclature Plus Quality

It is a matter of honor for any production collective to observe, in a very strict manner, delivery discipline and contractual obligations with co-workers and the consumers of the finished products. In the final analysis, the normal functioning of the entire economic mechanism is dependent upon this factor. For example, during the first half of this year our plant was a party to 751 economic contracts, with definite orders being associated with each contract.

The plant fully coped with its nomenclature plan and completed orders in accordance with the established schedules. The work is proceeding in this same manner at the present time. For the year as a whole, we will in no way be indebted to our customers.

The fulfillment of the plan for deliveries, in conformity with the contracts of Elektropribor, is being ensured based upon a system of measures of an organizational-technical and economic nature. In the Financial-Marketing Department, there is a card for each consumer. A check on the shipment of products is carried out not only in terms of months and decades but also on the basis of days. The department's workers maintain good contacts with the railroad workers (we ship products by means of freight cars, containers, baggage and parcels) and with the plant's dispatcher service. All of the central storehouses are subordinate to the production department; this facilitates control over the handling of orders and it guards against confusion occurring in the completing and assembly of products.

The system of continuous operational planning borrowed from the Novocherkassk machine-builders has proven to be the best method. Not without some difficulty, the required inventory is constantly being maintained in the departments and this provides a guarantee against a disruption in the work rhythm during possible and temporary interruptions in the supply of metal and other materials. Despite the fact that approximately 100,000 different parts are constantly employed in the various production stages, the leaders of the respective sectors, departments and services are always aware of the planned sequence of operations and they follow this sequence in an absolutely strict manner. The units and assemblies are completed on multi-product assembly belts in accordance with an approved standard plan.

Within the framework of the branch ministry and by agreement with the consumers, a great amount of work is being carried out at the plant in connection with product standardization. For example, instead of five types of telescopic masts, only one is being produced at the present time. Its

design has been approved and it fully satisfies the requirements of the customers. The operating characteristics of the telescopic masts have been improved and this has lowered the labor-consuming nature of the product.

While making every attempt to ensure that no order goes unfulfilled, our collective at the same time attaches great importance to the technical suitability and reliability of the products being produced. A complex system has been introduced for controlling quality; it is based upon enterprise standards which we developed. The overwhelming majority of the parts, units and assemblies are accepted when initially presented.

Nevertheless, we still cannot state that all of the workers and specialists are displaying the same degree of enthusiasm in carrying out their work as the leading workers of Elektropribor. Unfortunately, we are still encountering spoilage and excessive expenditures of working time and material resources are being tolerated. Thus the social organizations and the enterprise's administration attach priority importance to improving educational work within the collective, including the development of tutorship.

Economic Levers

I would like now to discuss those levers which are employed during the adoption and carrying out of counter plans for raising labor productivity. We have undertaken and are firmly following a program aimed at achieving departmental and sector specialization and the organization of product installation and assembly work using flow-line methods. The advantage offered by multi-product conveyer lines is not restricted to just increased earnings, but rather it also involves reduced fatiguability on the part of the workers owing to an alternation of operations.

Great results are being realized from the introduction of a progressive technology, particularly liquid stamping and casting under pressure.

As a result of following a program of technical re-equipment, each year a portion of the obsolete equipment is being replaced by modern types. Machine tool modernization is also being carried out as a result of successful work by our inventors and efficiency experts.

The technical and economic services and the party committee are devoting constant attention to the capital-output ratio index. We are striving to employ all available equipment to maximum capability and to obtain a greater amount of marketable output for each ruble of fixed capital. Compared to 1975 when the machine shift coefficient was 1.36, today it has "increased" to 1.53 and by the end of the five-year plan, according to estimates, it will be no less than 1.57.

What factors are being utilized in order to achieve more rapid growth in the capital-output ratio than that called for in the task for the five-year

plan? First of all, we are striving to staff the mechanical departments with sufficient machine tool operators for two shifts. We are providing training for our young personnel in the plant's professional-technical institute. Its students are paid a raised grant and fine dormitory facilities are made available for the out-of-town students. And those who following completion of their training at the PTU [professional-technical institute] commence work at the plant and work for a definite period of time, receive an increase of 30 percent in their [13th salary]."

Permit me now to discuss the problem of proper equipment maintenance, a factor which plays an important role in its utilization. The repair of machine tools and other units is carried out during time made available in the schedule. In addition to the specialists, the mechanics, electricians and the machine tool operators themselves participate in the repair work. This serves to improve their professional expertise. In addition, they can expect to receive additional material incentives depending upon a reduction in the schedules and the quality of "treatment" for the equipment.

The departments contain items of equipment which, based upon the type of work carried out on them, are in operation for only 1-2 hours per shift. Yet it is impossible to do without this equipment -- it is classified as being in "short supply." Nor is it deemed advisable to assign individual workers to such machine tools. We chose the following method: such low-activity equipment is serviced by personnel of the repair-mechanical department. Machinists possessing allied professions perform work on these machine tools, for appropriate additional payments, during those periods when they are not engaged in carrying out their principal obligations.

In documents having to do with improving the economic mechanism, special attention is given to improving the regime for thrift. A great amount of work remains to be carried out at our plant in this regard. During the first half of this year, the collective realized savings above the norms as follows: more than 1 million kilowatt hours of electric power, approximately 3,000 giga-calories of heat and 100 tons of ferrous and non-ferrous metals. On the basis of these indices, our enterprise won the socialist competition among enterprises throughout the oblast for the second year in a row. But we must not rest content with that which has been achieved.

By intensifying and improving economic accountability in all sectors and by improving the conscientiousness and economic education of the workers, we are annually realizing a reduction of 4-5 percent in the production costs for our products. And this is one of the principal conditions for raising profits and also contributions to the budget and the incentive funds.

Goals for 1980

True to a fine tradition, our collective presented the branch ministry with the draft counter plan for 1980 in a timely manner. The plan calls for

labor productivity to be raised 68.6 percent above the figure for 1975. The tasks established in the five-year plan for production volume, for raising the capital-output ratio and for obtaining profit must be over-fulfilled.

New and greater effort is required if these goals are to be achieved. The entire collective at the plant has been mobilized for the purpose of achieving them. The majority of workers, engineering-technical personnel, office workers, efficiency experts, inventors, rank and file production workers and youth are all participating in the continuing and creative search for internal reserves.

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